September 15, 1958

Paper Trade Journal

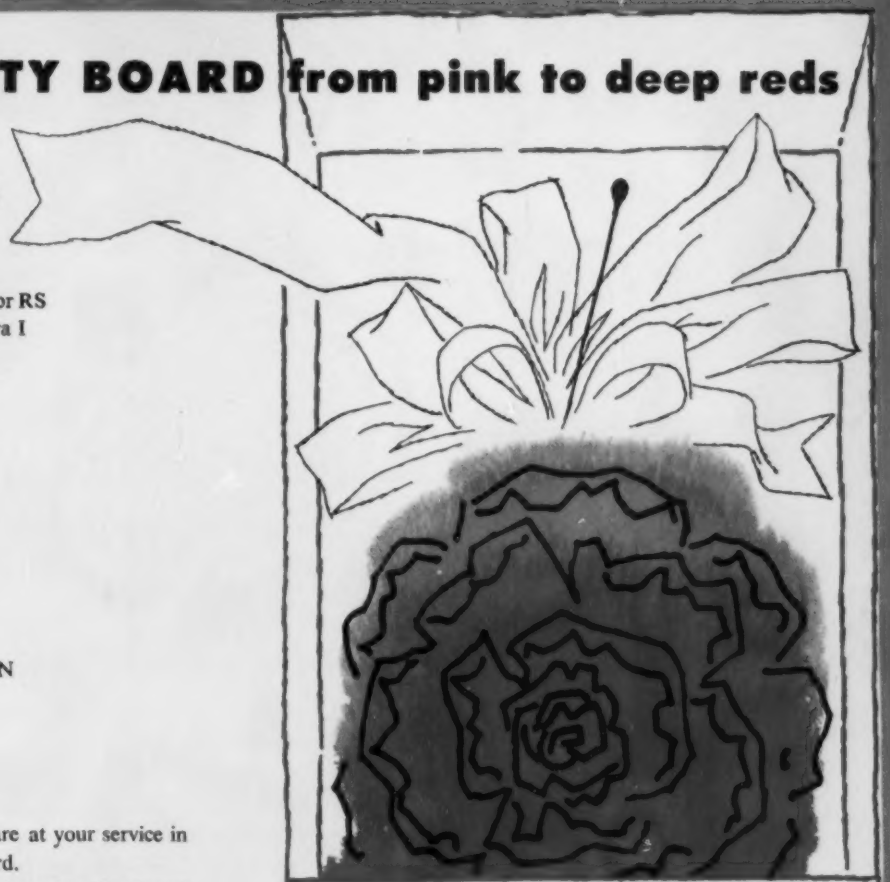
How American Box Board Assures a Continuing Pulpwood Supply

Hindo and Dauch's Waste Paper Stock Cleaning System

St. Regis Mill Makes Chip Handling System More Flexible

Sulphite and Kraft Mill Liquor Profitable for C-Z

FOR QUALITY BOARD from pink to deep reds



GEIGY suggests

in the beater

Diphenyl Red 4BS Supra
Diphenyl Fast Scarlet 4BAN or RS
Diphenyl Fast Red 5BL Supra I
Paper Scarlet MFL Supra
Croceine Scarlet M00 Conc
Fast Red Extra
Safranine Superfine Double G Conc
Rhodamine B Extra

at the calender

Croceine Scarlet M00 Conc
Erio* Floxine 2G Supra
Erio Floxine 6B Supra
Erio Rubine B Supra
Polar* Brilliant Red B or 3BN

at the coating machine

Irgalite* Red LDP
Irgalite Red LLP
Irgalite Pink GMP

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*Geigy registered trademark

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DIVISION OF GEIGY CHEMICAL CORPORATION
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Ann Arbor, Mich.

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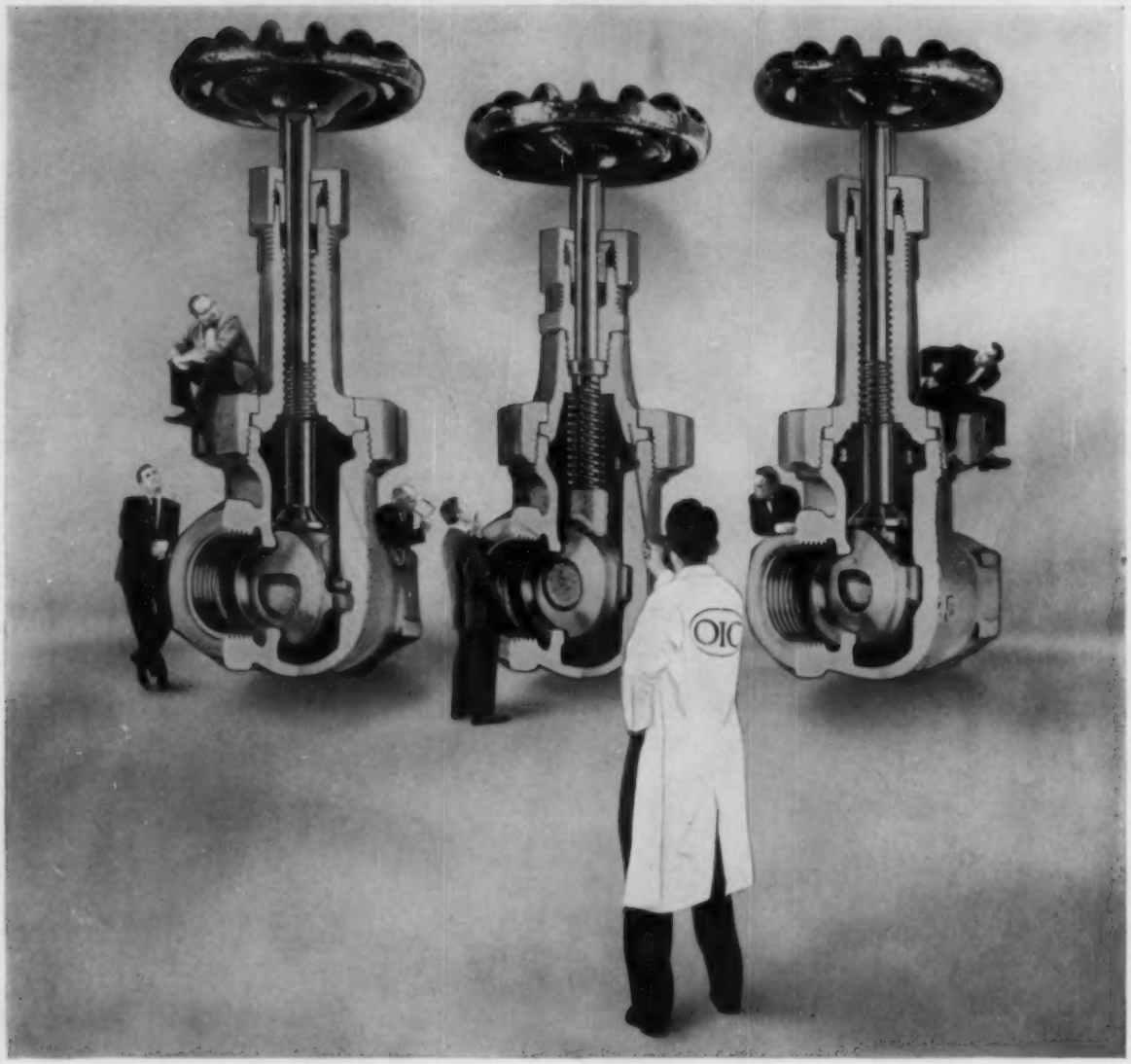

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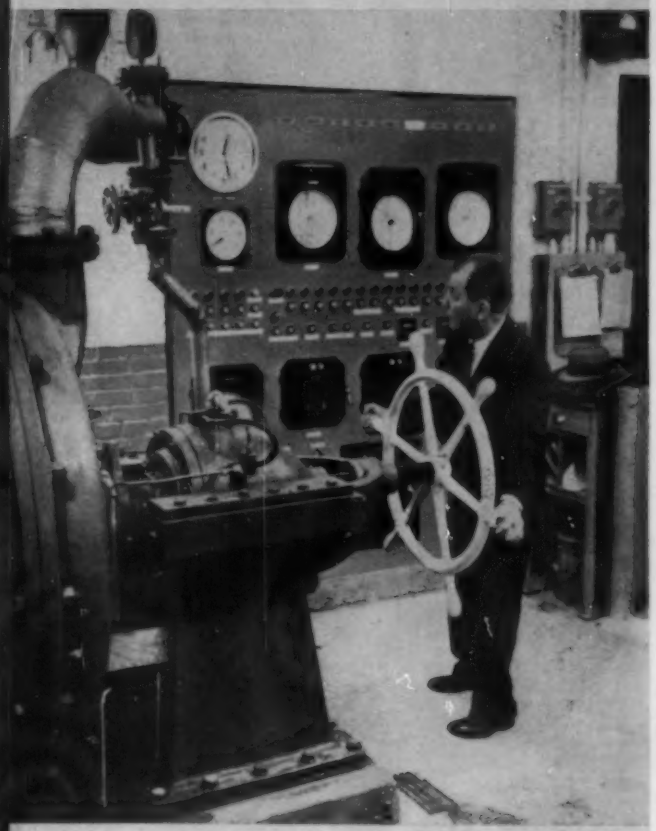

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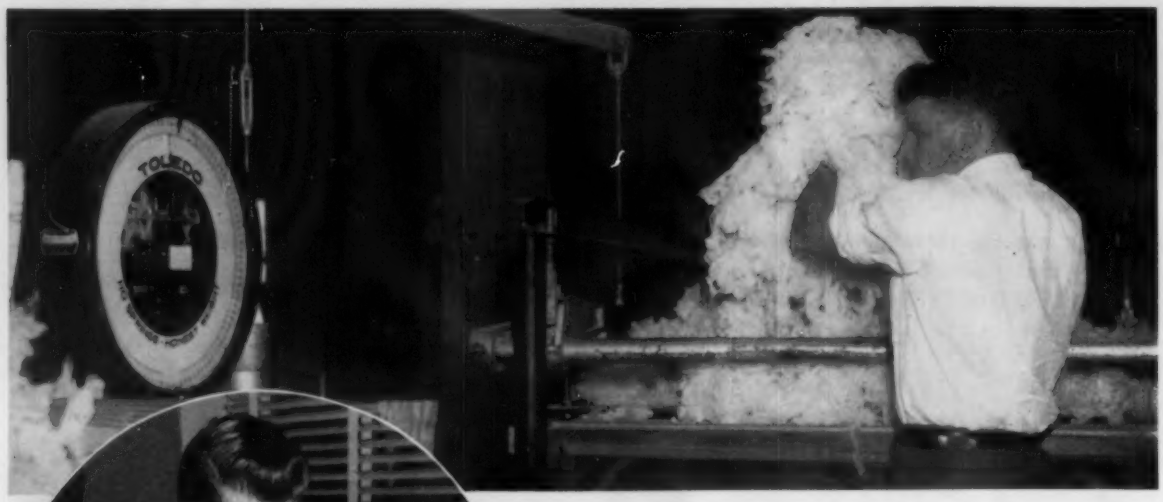

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Week of SEPTEMBER 15, 1958—Vol. 142, No. 37

TRENDS 23
NEWS OF THE WEEK 25
PAPER PEOPLE 27
NEWS OF CONVERTERS 28

FEATURE ARTICLES

American Box Board Aims at a Continuing Pulpwood Supply 32

Application of Centrifugal Cleaners in a Board Mill Using Waste Papers 40

How C-Z Gets Profits Out of Sulphite and Kraft Mill Liquors 46

St. Regis Adds Chip Storage System in Expanded Purchased Chip Program 54

FIGURES OF WEEK ... 30
NEW LITERATURE 35
PRICES 50
NEW EQUIPMENT 56
OBITUARIES 66
NEWS OF SUPPLIERS .. 65
CLASSIFIED ADVERTISING 70
ADVERTISERS INDEX .. 74

REMEMBER THESE DATES

Sept. 24-26: Alkaline Pulping Conference, Arlington Hotel, Hot Springs, Ark.
Oct. 7-8: Fibre Box Assn., Waldorf-Astoria Hotel, New York City.
Oct. 9-10: Fibre Drum Mfgrs. Assn., Drake Hotel, Chicago.
Oct. 9-10: TAPPI Deinking Conference, Dayton-Biltmore Hotel, Dayton, Ohio.
Oct. 20-22: TAPPI Paper-Plastics Conference, Kimball Hotel, Springfield, Mass.

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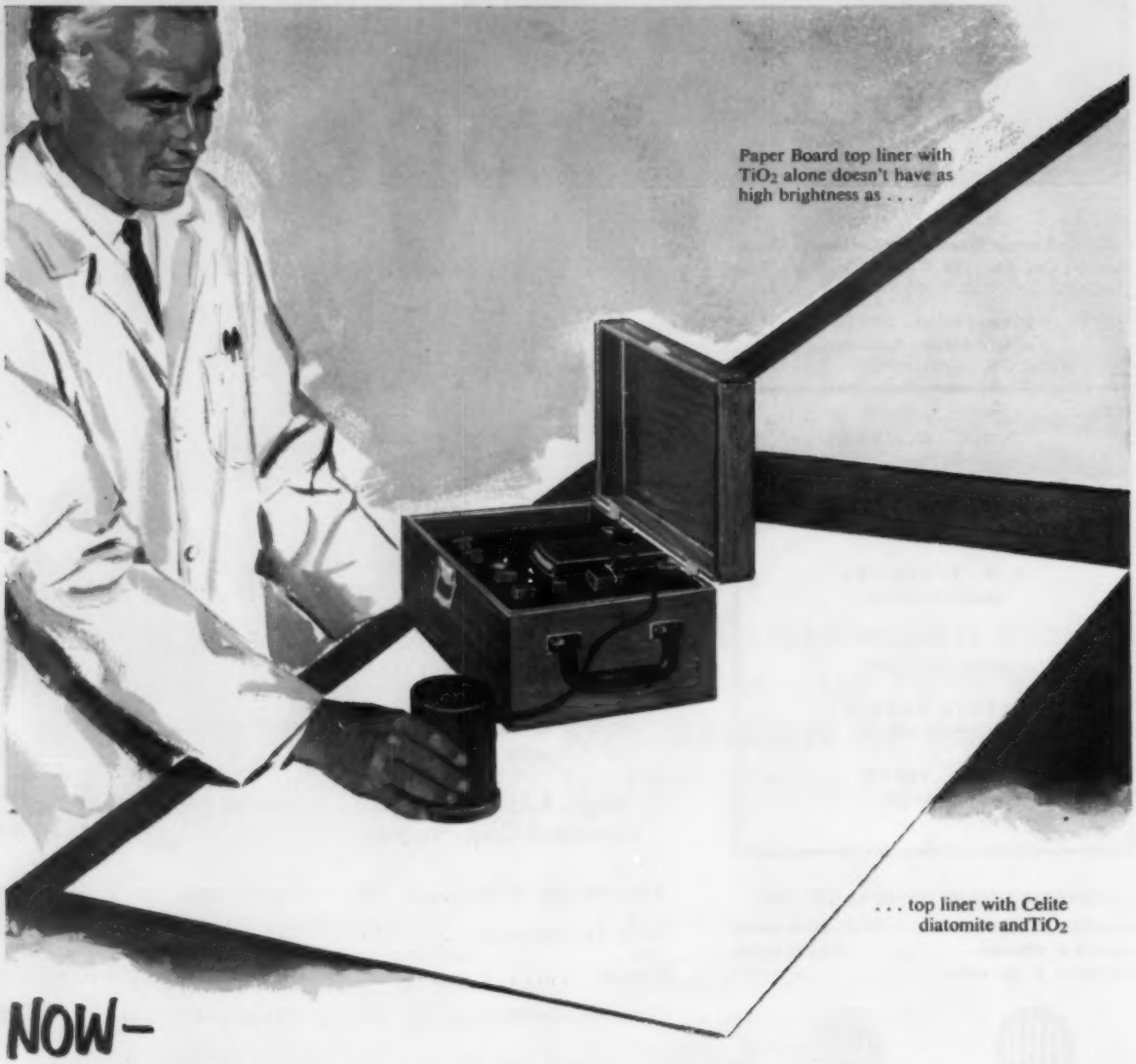

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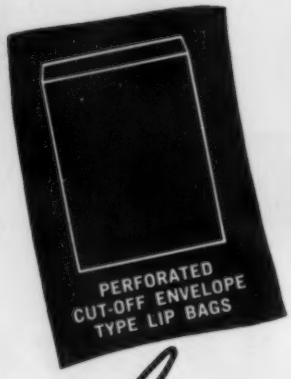

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FOOD MACHINERY AND CHEMICAL CORPORATION

Westvaco Chlor-Alkali Division

General Sales Offices:
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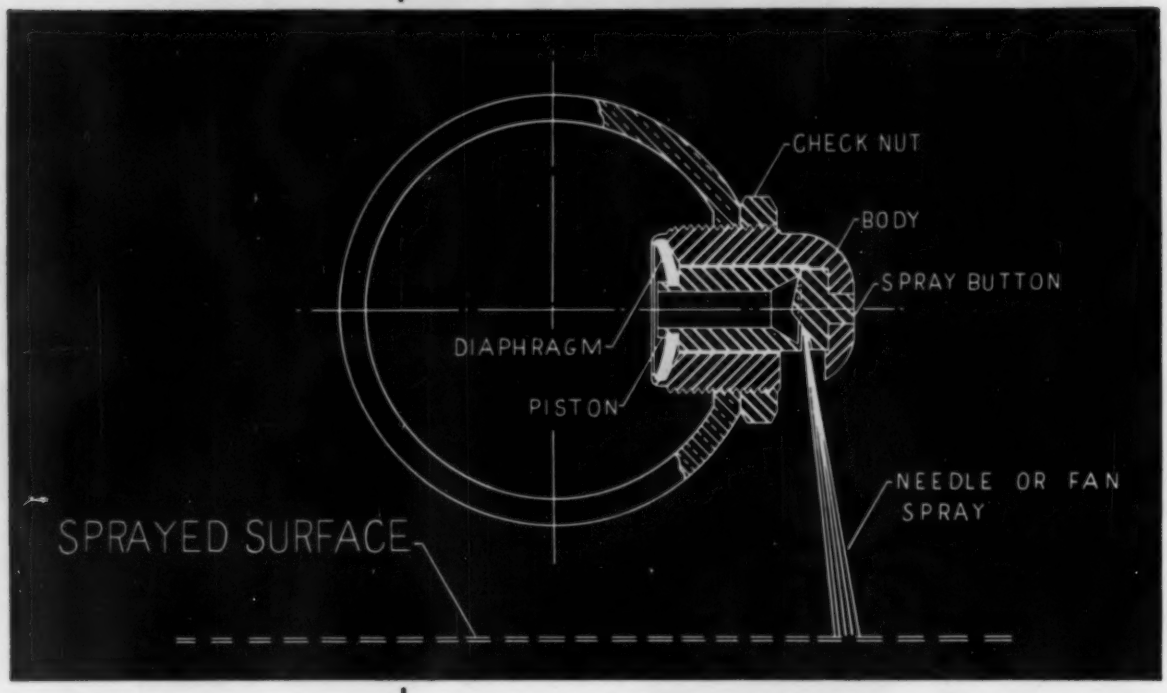
Basic design of the Lodding Nozzle in operation. Large, clear passages bring the white water up to the shaping parts. Small particles if lodged cause piston to oscillate and free them.



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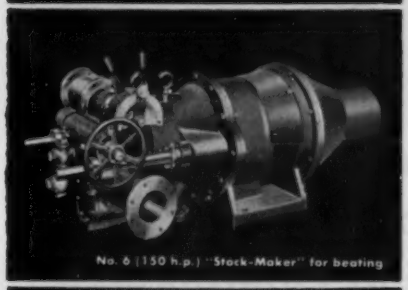
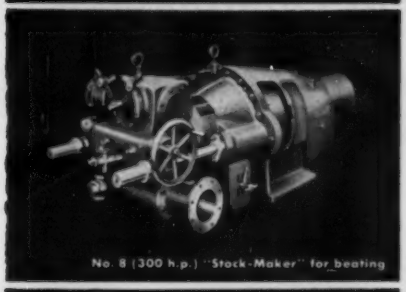
LODDING ENGINEERING CORPORATION
WORCESTER, MASSACHUSETTS

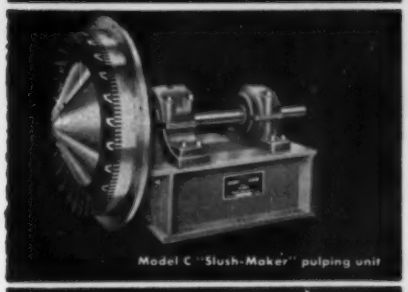
"Stuff-Maker" for jordaning



No. 6 (150 h.p.) "Stock-Maker" for beating



No. 8 (300 h.p.) "Stock-Maker" for beating



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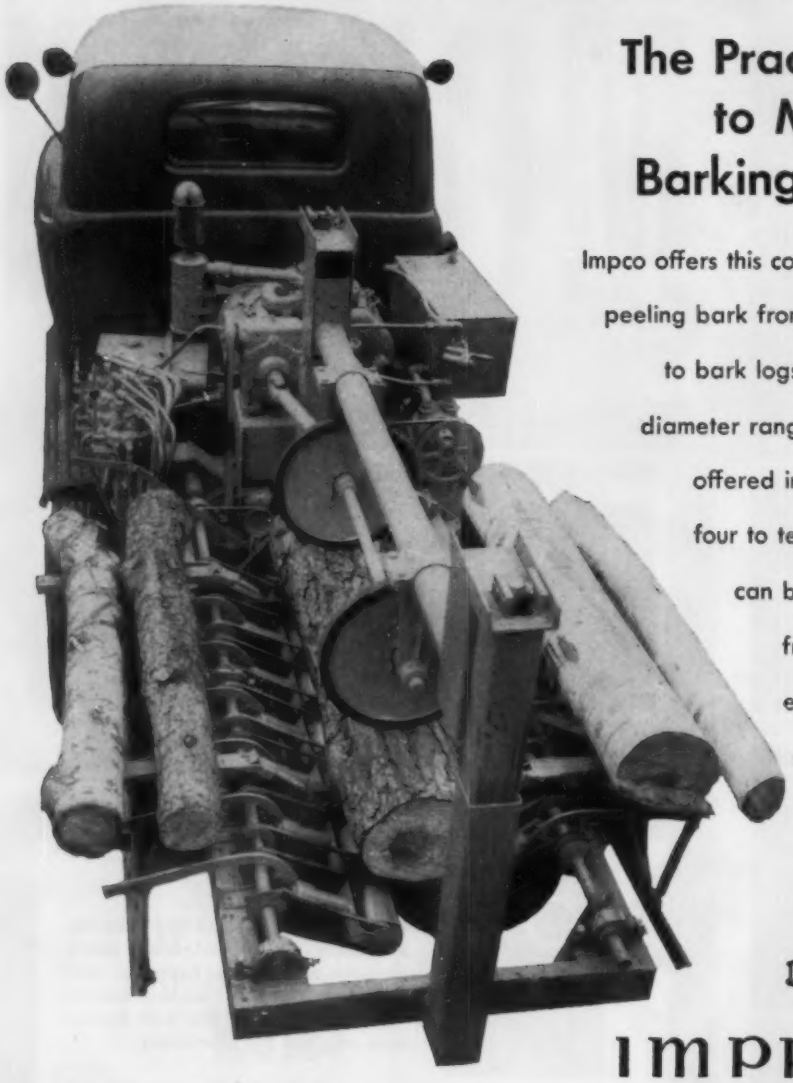

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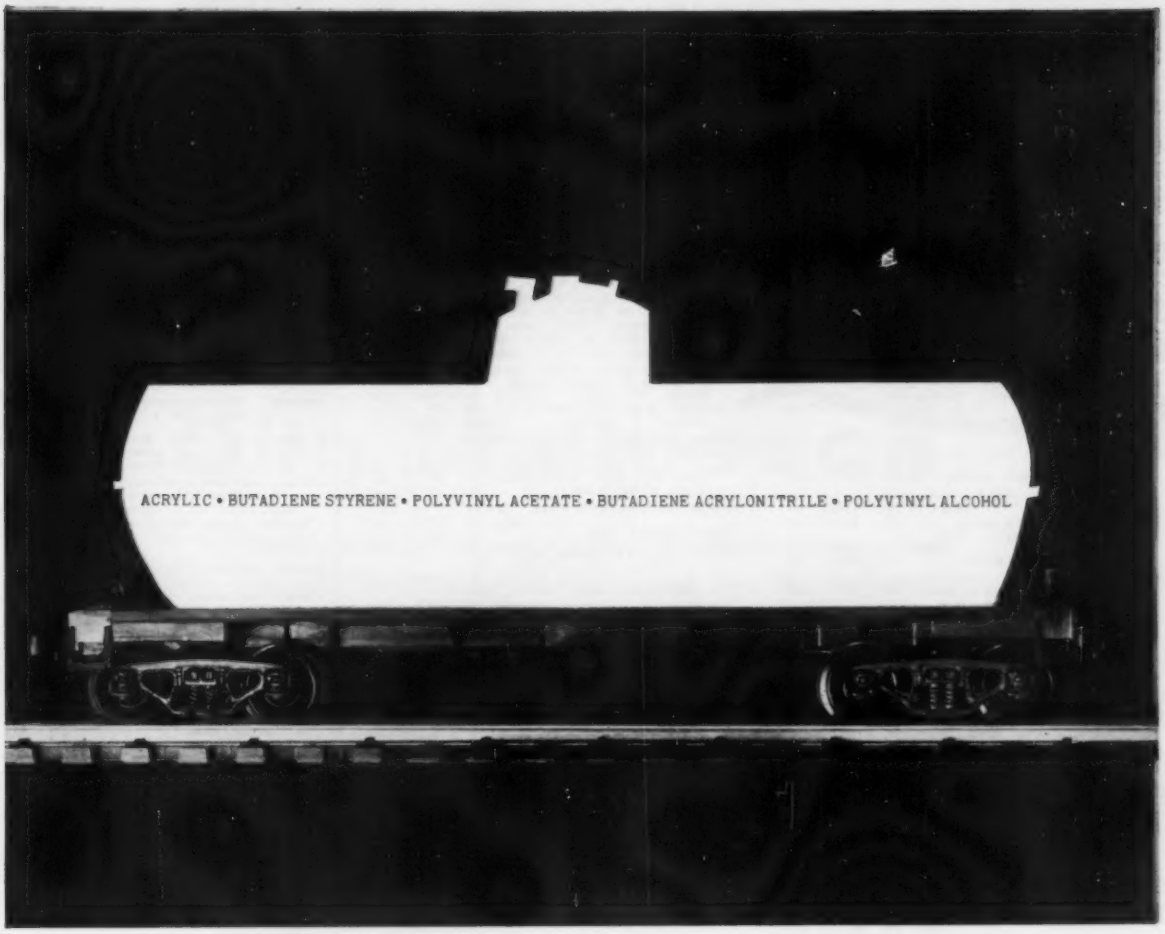

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paper bgs. l.c.l. dock pts 100 lbs 3.00 4.77
bulk c.l. works 100 lbs 1.60 —
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bulk c.l., works 100 lbs 1.85 —
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50% rayon type sellers tanks 100 lbs 3.80 3.00
73%, sellers' tanks, works, dry basis 100 lbs. 3.[illegible] —
Soda, caustic, liq., 73%, rayon type, sellers' tanks, works, dry basis 100 lb[illegible] • 3.10
[illegible] 100 lbs. 4.80 • —
Soda sal conc. bgs. c.l. works 100 lbs 2.50 —
bgs. smaller lots works 100 lbs 2.80 —
Sodium acetate anhyd., bgs., c.l., dlvd E lb. 14½ —
bgs., l.c.l. same basis lb. 16½ —
NF, 98% gran. dms. c.l., works lb 15½ —
dms., l.c.l., works lb 17½ —
Sodium alginate, NF white powd. dms. 300 lbs or more lb 93 —
Sodium p-aminosalicylate, dms. 100-lb lots or more, frt adjusted lb 2.70 —
Sodium antimoniate, bgs., c.l., dlvd. E lb. 25½ —
bgs., l.c.l., dlvd. E lb. .27 —
Sodium arsenate, 60% arsenic pentoxide, dealers, dms., ton or more, works lb. .20 —
dms., less than ton lots, works lb. .20½ —
Sodium arsenite 90% pink powder 75% arsenious oxide, dealers, dms., ton lots or more, works. lb. .17½ —
dms., less than ton lots, works. lb. .18 • .19
Sodium ascorbate, dms. 25-50 kilo lots kilo. 10 00 —
dms., 10-kilo lots kilo. 10 35 —
dms., 5-kilo lots kilo 10 75 —
dms., 1-kilo lots kilo 11 00 —
bots. 500-gram bots kilo. 11 50 —
Sodium benzoate, tech. c.l. t.l., frt. alld lb. .35 —
dms., l.c.l., same basis lb .39 —
USP, c.l., t.l. frt. alld lb .38 • —
ton lots same basis lb. .43 • —
1,000-lb lots, same basis lb .45 • —
Sodium bicarbonate USP gran., bgs c.l., works 100 lbs 2 95 —
bgs. l.c.l. works 100 lbs 3 85 —
USP, powd., bgs. c.l. works 100 lbs 2.55 —
bgs. l.c.l., works 100 lbs 3 45 —
Sodium bichromate gran. bgs. c.l., t.l. works lb 13 —
bgs. l.c.l. works lb 13½ 14¼
Sodium bifluoride bbls c.l works frt equald lb 17½ —
bbls. l.c.l. same basis lb 1900 —
Sodium bisulfate bulk c.l works 100 lbs 2 00 —
dms. c.l., frt equald 100 lbs 3 00 3 60
dms. l.c.l. frt equald 100 lbs 3 50 4 10
Sodium bisulfite anhyd. bgs., c.l. works 100 lbs 3 00 —
bgs., l.c.l., works 100 lbs. 3.45 • —
Soln., 35° bbls., c.l., works 100 lbs. 1.70 • —
bbls. l.c.l. works 100 lbs 2.20 —
Sodium borate (see Borax)
Sodium bromide, USP gran., dms., works lb. 40 —
Sodium carbonate, cryst., monohydrated (see Soda ash)
Sodium carbonate, monohydrated, bgs. c.l. works 100 lbs 3.10 —
bgs. l.c.l. works 100 lbs 3.50 —
Sodium carboxymethyl cellulose (see CMC)
Sodium chlorate cryst., 350-lb. dms., c.l., works lb. .09 —
dms. l.c.l works lb 09½ 10½
Sodium chlorate in 100-lb. dms. only, ¼c per lb higher
Sodium chloride tech (see Salt)
Sodium chloride USP gran. bgs lb .05 —
Sodium chlorite tech. dms. c.l. works lb. .56 • —
dms., 20-dm. lots or more, works. lb .66 —
dms smaller lots works lb 70 72
Sodium chloroacetate tech. dms., c.l. works lb .27 —
dms. l.c.l works lb 28 —
Sodium chromate anhyd. fib dms. c.l. t.l. works lb 14¾ —
fib. dms., l.c.l. works lb 15¼ 16½

Sodium chromate, tetrahydrate, bgs., c.l., t.l., works lb. .1015 —
bgs. l.c.l lb 1065 1150
Sodium citrate anhyd. dms lb 62 —
NF VIII, gran. dms lb 26½ 27½
USP XIV gran dms lb 29½ 30½
Sodium citrate USP powd prices ¼c higher
Sodium cyanide dms. 1,000-lb lots, works lb .85 —
dms. smaller lots works lb .90 1 10
Sodium cyanide, flake, 96-98% dms., c.l or 20,000-lb lots lb 193 —
dms. over 1,000-lb tots lb 203 —
dms 100-lb to 1,000-lb lots lb 213 —
Gran sodium cyanide 1c higher
Sodium diacetate, 33-35% acidity 250 lb dms works lb 15 —
250-lb dms l.c.l works lb 15¼ —
Anhyd. dms c.l. works lb 18 —
dms. l.c.l works lb 18¼ —
Sodium dimethyl dithiocarbamate, 40% soln., dms., c.l., t.l., frt. alld., 100% basis lb. .42 • —
dms., l.c.l., t.l.l., same basis lb. .47 • .52
tanks, same basis lb. .38 • —
Sodium ferrocyanide bgs. 10-ton lots lb 13½ —
bgs. smaller lots lb 14 —
Sodium fluoride white, 97% fib dms. c.l. works, frt. equald lb 1380 —
fib. dms. l.c.l. works, frt. equald lb 1430 —
Sodium formate bgs. c.l. works 100 lbs 7.00 —
bgs. l.c.l. works 100 lbs 6.65 —
Sodium gentisate 100-lb fib dms. lb 5.50 —
Sodium gluconate refd. dms lb 84 —
Tech., dms., bgs. lb. .37 • .39
Sodium hydride powd. dms. works lb 1.90 2.75
Sodium hydrosulfide (see Sodium sulfhydrate)
Sodium hydrosulfite dms. c.l., frt alld lb 2[illegible]
dms., l.c.l., frt alld lb
Sodium hydroxide NF pellets 100-lb dms. 1 to 100-dm lots lb
Sodium hydroxide tech (see Soda caustic)
Sodium hypophosphite NF dms. 1,000-lb. lots lb.
Sodium hyposulfite anhyd. photo grade bgs. c.l. works 100 lb
bgs., l.c.l., works 100 lb.
Tech., bgs., c.l., works 100 lbs
bgs., l.c.l., works 100 lb
Sodium hyposulfite hexahydrate, pea. cryst. bgs., c.l. works 100 lb
bgs. l.c.l. works 100 lb
photo grade bgs. c.l. [illegible]
bgs. l.c.l. [illegible]
Sodium hyposulfite tech., [illegible]
bgs., l.c.l.
Sodium iodide, [illegible]
Sodium tartate [illegible]
Sodium taury[illegible]
dms., t.c.l., [illegible]
tanks dlvd
Sodium metabisulfite [illegible]
Sodium metasilicate gran., [illegible]
bgs., ton lots
bgs., smaller
Sodium metasilicate [illegible]
bgs.,
bgs., ton lots
bgs., smaller
Sodium metallic [illegible]
Fused, 18,000-lb [illegible]
tanks, works
Sodium metanilate bbls. f[illegible]
Sodium metasilicate anhyd c.l., works
bgs. 6,800-19,900 lb lots
dms. c.l. works
dms., l.c.l. works
Sodium metasilicate penta hgs. c.l. works
bgs. l.c.l. works
dms. c.l., works
dms. l.c.l works
Sodium molybdate anh works t.t
Cryst dms works fr
Sodium monoglutamate (so dium glutamate)
Sodium monohydrate (so carbonate monohydra

Sodium naphthionate, bbls. . . lb .70 • —
Sodium nitrate dom., crude, bgs., c.l. works ton.48.75 • —
bulk, c.l., works ton.45.25 • —
Sodium nitrate, imp., 100-lb. bags., c.l., Atl., Gulf, Pac., whse. ton.49.75 • —
bulk, c.l., same basis ton.46.25 • —
Sodium nitrite USP, bbls., c.l., works frt equald 100 lbs. 9.00 • —
bbls. l.c.l. same basis 100 lbs.11 00 • —
Sodium orthosilicate conc. dms., c.l., works 100 lbs 6.70 —
dms. l.c.l., works 100 lbs 7.05 7.05
Sodium orthosilicate hydrated, flake, bbls., c.l. works 100 lbs 5.65 • —
bbls. l.c.l. works 100 lbs 7 60 7 90
Sodium oxalate 98% bgs. works 100 lbs.12.35 • •
Sodium para aminobenzoate (see Sodium p-aminobenzoate)
Sodium para aminosalicylate (see Sodium p-aminosalicylate)
Sodium pentachlorophenate, briquets bgs. c.l. works, frt. equald lb .26 —
bgs. l.c.l. same basis lb 27½ 34
Pellets bgs. c.l., same basis lb 26 —
bgs. l.c.l. same basis lb 27½ 34
Sodium pentachlorophenate, powd., bgs., dms., c.l., same basis lb. .25 • —
bgs dms l.c.l same basis lb 26½ 33
Sodium pentachlorophenate, 30,000 lbs., min truckloads ¼c per lb over earlot prices
Sodium pentobarbital, USP, dms., 100 lbs. or more lb. 6.00 • —
Sodium perborate NF, tech., bgs., c.l. works lb .19 —
bgs. l.c.l. works lb .21 —
Sodium peroxide dms c.l. t.l. dlvd E of Miss lb 20½ —
dms l.c.l same basis lb 21 21
Sodium phenobarbital, USP, 100-lb. dms lb. 3.75 • —
Sodium phenolsulfonate, USP IX, gran., dms lb. .50 • .51
NF, powd., dms. lb. .53 • .54
Sodium phosphate, dibasic anhyd., bgs., c.l. frt equald 100 lbs 7.05 —
[illegible], l.c.l., same basis 100 lbs. 8.35 • 9.40
dihydrate bgs., c.l., frt equald 100 lbs 6 60 —
[illegible] l.c.l., same basis 100 lbs. 8.10 • —
phosphate, dibasic, USP, dried, powd., bgs., dms., works lb. .19 • .20
phosphate, monobasic, an-[illegible], bgs., c.l., frt. equald. 100 lbs. 9.00 • —
[illegible], l.c.l., same basis 100 lbs. 9.40 • 10.00
phosphate, tribasic, an-[illegible]., bgs., c.l., frt. equald. 100 lbs. 9.05 • —
bgs. l.c.l. frt equald.100 lbs 9 45 10 05
[illegible], frt. equald 100 lbs. 4.60 • —
[illegible], l.c.l., frt. equald 100 lbs. 5.00 • 5.75
[illegible]ate in dms. 60c to [illegible] bgs
[illegible] (see Sodium [illegible]
[illegible], bgs., equald. 100 lbs 11 10 —
100 lbs.11.85 • 12.35
[illegible], dms., [illegible] lb. .36 • —
lb .37 .39
[illegible] basic, [illegible]orks.
100 lbs 7.81 —
100 lbs. 9.21 • 9.71
[illegible] lb. .78½ —
[illegible] lb. .81½ —
[illegible] l.c.l., [illegible] lbs 2.35 —
[illegible] lbs 4 10 4.35
[illegible] lbs. 4.35 • 4.60
[illegible] lbs 4.75 4.90
[illegible] lbs 5.35 5.60
[illegible] E of Miss., [illegible] and Va., Ala., [illegible] E of 100°; [illegible] and Vt., in [illegible] zones; Daven[illegible] E of 98° [illegible]nn Mo (ex-[illegible] N C., S C., [illegible] of 100° (ex-[illegible] La and Miss [illegible] Kan, Neb W [illegible] W of 100° [illegible]ing El Paso [illegible] Nev., N M.,
[illegible], bgs., 100 lbs. 5.70 • —
100 lbs. 6.20 • —
100 lbs. 5.00 • —
[illegible] works. 100 lbs. 5.35 —
100 lbs. 5.50 • —
[illegible] works. 100 lbs. 5.85 • —

to get more for your chemical dollar...

call Olin Mathieson

If you think of chemical raw material costs only as the dollars-per-ton price, you might benefit from a talk with the man from Olin Mathieson.

Time costs you money—your orders are not delayed at Olin Mathieson; they are handled rapidly through a private communications system described by Western Union as outstanding.

Inventories cost you money—with multiple shipping points we can schedule deliveries to keep your inventory investment at the safe minimum.

Transportation costs money—for many chemical users our efforts have resulted in lower rates. You can choose water, rail or truck deliveries to suit your convenience.

Processing costs money—we supply technical service to consult with you on handling, storage and process problems.

Your Olin Mathieson representative is in the business of chemicals service. Talk it over with your purchasing department today—then call Olin Mathieson Chemical Corporation, Chemicals Division, Baltimore 3, Maryland.

OLIN MATHIESON CHEMICAL CORPORATION

MATHIESON CHEMICALS

6271

Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Soda • Chlorine • Hydrazine and Derivatives • Hypochlorite Products • Methanol • Muriatic Acid • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sodium Methylate • Sulfate of Alumina • Sulfur (Processed) • Sulfuric Acid

Super V-belts

on tough drive save $1000

Especially designed to withstand heat, oil and the heaviest shock loads, Gates Super Vulco Ropes solve tough drive problems and reduce both maintenance and replacement costs.

For instance: Hackney Iron and Steel Company, Enid, Oklahoma, formerly used a flat leather belt to drive the hydraulic pump on its huge forming press. This belt—only 18 inches from the red hot steel being shaped—would stretch, slip and come off the drive.

When a new press was installed, a compact, dependable Gates Super Vulco Rope was substituted. This drive—operating 8 hours a day for 5 years *without lost time for maintenance*—has saved the company more than $1000.

Claude King, maintenance superintendent, says, "Because of the way Gates Super Vulco Ropes have stood up on four of our presses, I plan to convert other drives in the plant to Super Vulco Ropes."

Drive data and design assistance are quickly available to you. Simply call your nearby Gates Distributor. Gates V-Belt stocks are carried in all major industrial centers.

No other V-belt has ALL these advantages

1. Flex-Weave Cover (U. S. Pat. 2519590)

A Gates exclusive: provides greater flexibility...prolongs belt life...helps deliver more power to driven machine.

2. Concave Sidewalls (U. S. Pat. 1813698)

Note the concave sides shown in Fig. 1. As belt bends, concave sides become straight, making uniform contact with sheave groove (Fig. 1-A). Even contact means uniform wear...far longer belt life.

3. Tough, Resilient Tensile Cords

Super strong and resilient; provide 40% greater horsepower capacity...easily absorb heavy shock loads...reduce number of belts required, save weight and space.

4. High Electrical Conductivity

Built into Gates Super Vulco Ropes for safer drives (in explosive atmosphere).

5. Oil, Heat, Weather Resistant

Made with special rubber compounds, Super Vulco Ropes stand up longer under all conditions.

TPA 352

Gates

World's Largest Maker of V-Belts

THE GATES RUBBER COMPANY

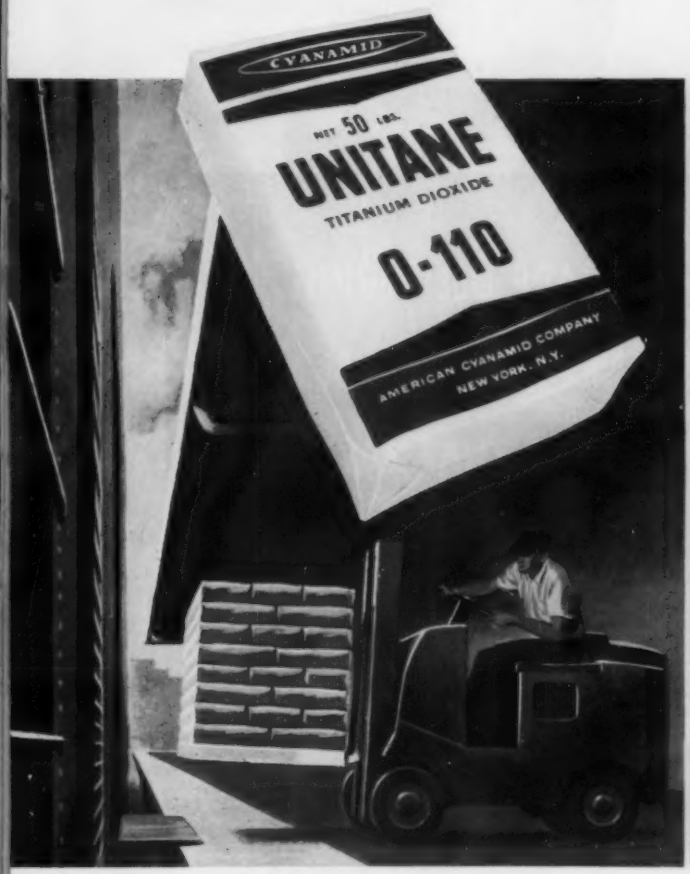
Denver, Colorado

Gates Super VULCO ROPE Drives

40% more Horsepower Capacity

now you're seeing double!

Production capacity of UNITANE® titanium dioxide has been doubled at Cyanamid's Savannah, Ga., plant.



HERE'S WHAT THIS MEANS TO YOU...

1. More High-Quality Unitane to satisfy your every requirement.
2. Extra Assurance of Accurate Quality Control. UNITANE is produced with the most modern equipment in the industry.
3. A Complete Line of Unitane TiO_2 Pigments, anatase and rutile, from the industry's fastest-growing major producer.
4. Expert Research and Technical Service to help solve formulation and application problems.

Call on your Cyanamid Pigments representative for complete information.

Lighter WHITER AND BRIGHTER WITH UNITANE

CYANAMID

AMERICAN CYANAMID COMPANY
Pigments Division
30 Rockefeller Plaza · New York 20, N. Y.
Branch Offices and Warehouses in Principal Cities

now you're seeing double!

Production capacity of UNITANE® titanium dioxide has been doubled at Cyanamid's Savannah, Ga., plant.

HERE'S WHAT THIS MEANS TO YOU...

1. More High-Quality Unitane to satisfy your every requirement.
2. Extra Assurance of Accurate Quality Control. UNITANE is produced with the most modern equipment in the industry.
3. A Complete Line of Unitane TiO_2 Pigments, anatase and rutile, from the industry's fastest-growing major producer.
4. Expert Research and Technical Service to help solve formulation and application problems.

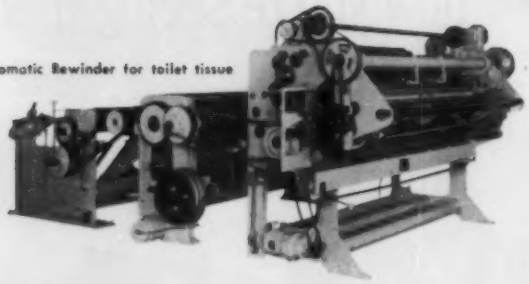
Call on your Cyanamid Pigments representative for complete information.

Lighter WHITER AND BRIGHTER WITH UNITANE

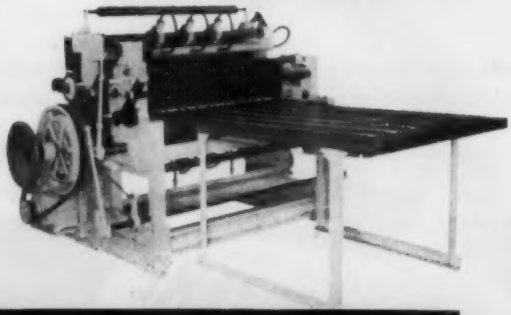
CYANAMID

AMERICAN CYANAMID COMPANY
Pigments Division
30 Rockefeller Plaza · New York 20, N. Y.
Branch Offices and Warehouses in Principal Cities

Automatic Rewinder for toilet tissue



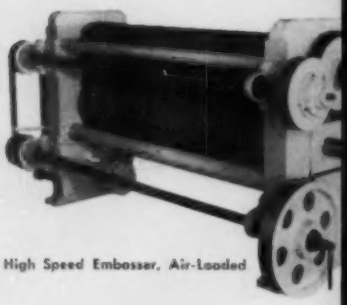
High Speed Singlefold Towel Machine



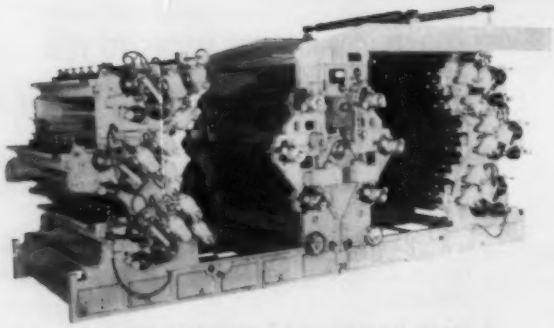
Core Machine, hydraulic control, score cut-off

THESE MACHINES ARE DELIVERING THE PERFORMANCE WE PROMISED . . . ASK THE COMPANIES THAT OWN THEM

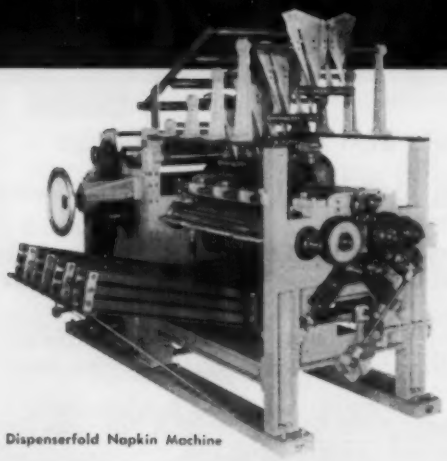
rewinders, printing presses, folders, embossers, core and napkin machines, special converting machines



High Speed Embosser, Air-Loaded



6-Color Rubber Plate Letterpress for packaging paper

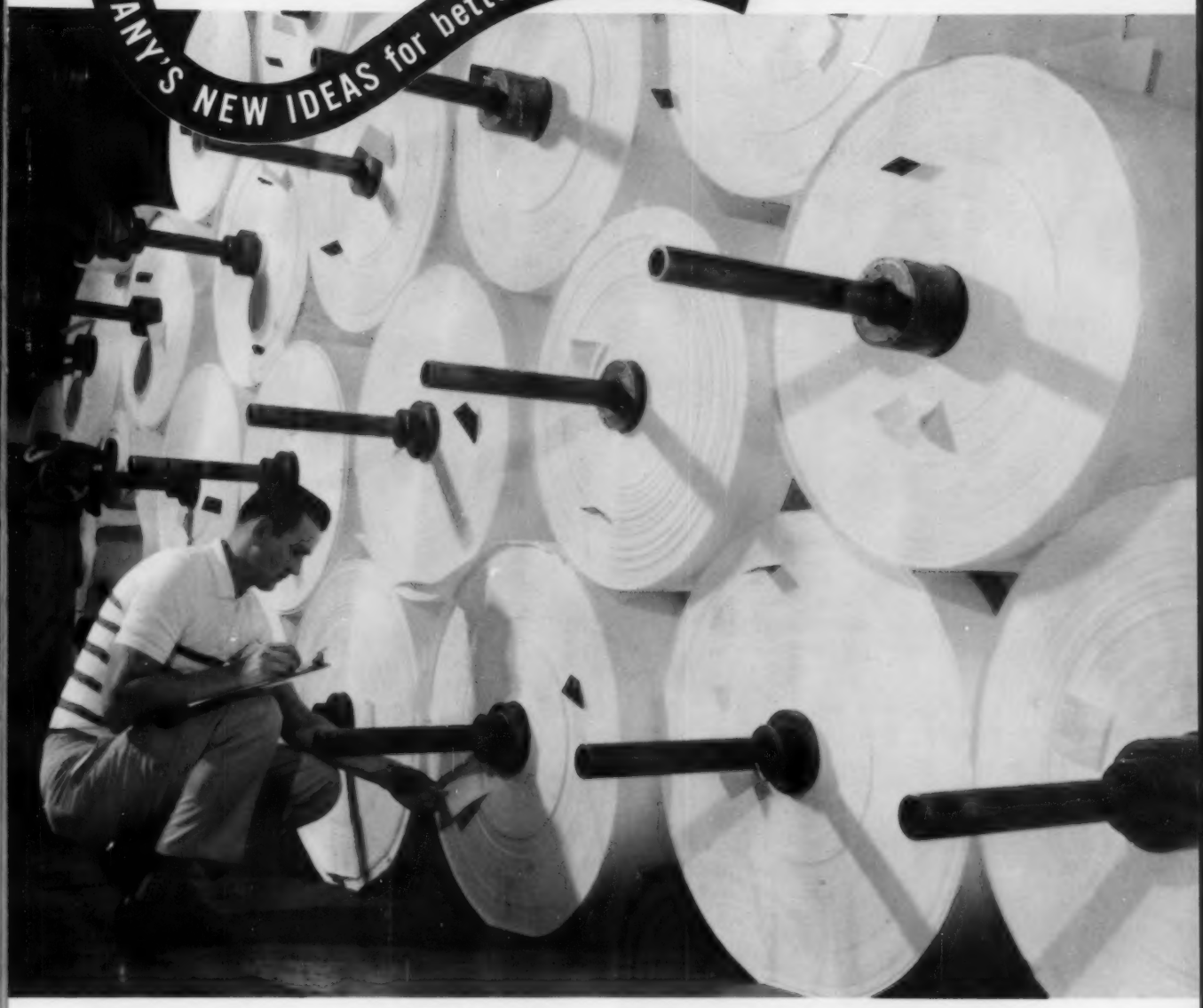


Super Eight Dispenserfold Napkin Machine

PAPER CONVERTING MACHINE COMPANY
Green Bay, Wisconsin

PCMC

ALBANY'S NEW IDEAS for better papermaking



THE BIG PICTURE . . .

MORE SALEABLE TONS PER DAY

Today's market stresses quality and costs. So more than ever, paper mills think in terms of more saleable tons per day.

In 1952, Albany Felt Company introduced this yardstick as the most effective measurement of felt efficiency. For at Albany Felt Company we always design felts to last as long as possible; but our major objective is to produce felts that will help you achieve the big picture . . . fast, trouble-free performance, consistently high average production of quality paper or board for more saleable tons per day.

For detailed case history information, write us or consult with your Albany Felt Company sales engineer.

ALBANY FELT COMPANY

"THE WORLD'S LARGEST MANUFACTURER OF PAPER MACHINE FELTS"

MAIN OFFICE & PLANT, ALBANY, N.Y. OTHER PLANTS: HOOSICK FALLS, N.Y.; N. MONMOUTH, ME.; ST. STEPHEN, S.C.; COWANSVILLE, P.Q.

One in a series of interviews with the men who are "Virginia"

"The paper manufacturer who is not using SO_2 in any of his bleaching processes is missing an opportunity to cut costs and improve the quality of his paper"

Hiram B. Channon, technical consultant for Virginia Smelting Company, discusses the economic advantages of sulfur dioxide to paper manufacturers.

Hiram B. Channon, a "Virginia" technical consultant.

Q How, specifically, is SO_2 used in pulp bleaching?

A Well, it has many important functions. It is used to adjust *p*H, as a reducing agent, as a decolorizer, and to help remove impurities from pulp after bleaching. It also works efficiently as an antichlor and in the fortification of sulfite acid liquors.

Q Are there other chemicals that will perform these functions?

A Yes, but none with the same overall efficiency. "Virginia" liquid sulfur dioxide is refined to a purity of 99.98%. Being a gas, it leaves no residuals that must be dealt with. And, of course, one of its most attractive features to industry is its low cost.

Q What does this degree of purity mean to papermakers?

A It means that in such concentration, a little of our SO_2 goes a long way. And of course liquid sulfur dioxide is one of the most inexpensive reducing agents available.

Q Can SO_2 be used in all bleaching processes—in ones using chlorine or peroxide, for example?

A Absolutely. In chlorine bleaching, it acts as an antichlor and neutralizes its activity. If the chlorine remaining in the pulp after washing went to the dryer it would cause a deterioration in pulp strength. And SO_2 performs in much the same way when used with the peroxide process. It is also used extensively in the manufacture of chlorine dioxide.

Q Do these functions of SO_2 result in improved paper quality?

A Yes. The brightness of the pulp will be increased several points by "flash" bleaching, and SO_2 helps hold that brightness, preventing color reversion. It can also help cut costs on equipment. Over-all, I would say that SO_2 gives the manufacturer a better, more salable product, whether it is made from bleached or semibleached kraft, groundwood pulp or sulfite pulp.

Q How can "Virginia" help paper manufacturers?

A Through our long experience in supplying SO_2 to the pulp and paper industry we have accumulated a great deal of know-how in every phase of pulp processing where SO_2 is used. Our technical service has helped customers in many ways—with wet strength problems, in getting more brightness points, and so on. And naturally we are skilled in SO_2 transportation, storage, handling and control. Our technical service, I know, has been one of the major factors in the excellent relations we enjoy with our customers.

Q Does "Virginia" supply other chemicals to the paper industry?

A Our "Virginia" Zinc Hydrosulfite is one of the best known of the groundwood pulp bleaches and is used by most of the leading paper manufacturers. Where the process is set up to use it, we also supply sodium hydrosulfite.

• • •

IF YOU ARE INTERESTED IN WHAT SO_2 CAN DO FOR YOU—

just write us on your company letterhead. We will be pleased to send you technical information or have a representative call to discuss the use of SO_2 with you.

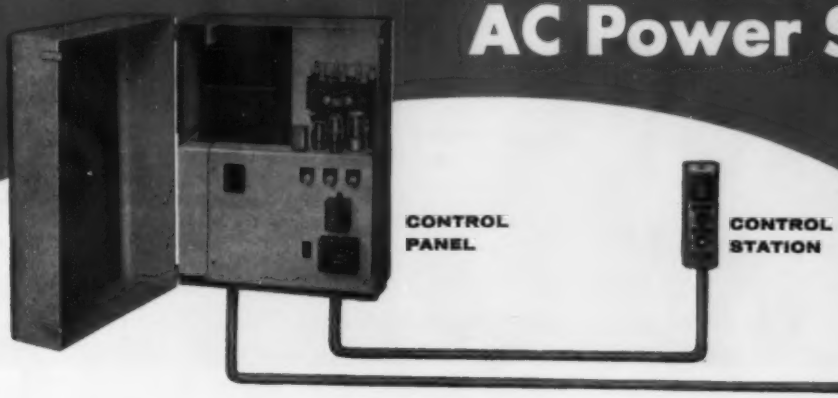
Industrial Division
VIRGINIA SMELTING COMPANY
Dept. 211, West Norfolk, Va.

VIRGINIA® Chemicals

Field Offices: New York • Boston • Detroit • Chicago
Atlanta • Asheville • Philadelphia • Akron • Seattle
Available in Canada and many other countries

DYNAMATIC®

Drive Package Provides Infinitely Adjustable Speeds from AC Power Source



The complete Dynamatic power package includes all components required to provide infinitely adjustable speeds from an alternating current power source. A Dynamatic Ajusto-Spede® or Dynaspede® Drive, with electronic control and pushbutton station, satisfies the requirements of almost any application where proper machine operation or material processing depends upon control of operating speeds.

The compact control panel may be remotely mounted to conserve valuable space on the driven machine. The pushbutton station at the operator's position puts vital controls conveniently at the operator's fingertips and requires a minimum of space.

Speeds are infinitely adjustable from 0 RPM to full output speed, and accurate speed regulation may be obtained from 100 RPM to full output speed.

Ajusto-Spede® Drives, available in ratings of 1/4 horsepower to 75 horsepower, are air-cooled. Dynaspede® Drives, rated from 3 to 75 horsepower, are liquid-cooled. Raise your productive efficiency with Dynamatic eddy-current units.

DYNAMATIC®
AJUSTO-SPEDE DRIVE

Send for Illustrated Literature Describing Dynamatic Adjustable Speed Drives

EATON

DYNAMATIC DIVISION
MANUFACTURING COMPANY
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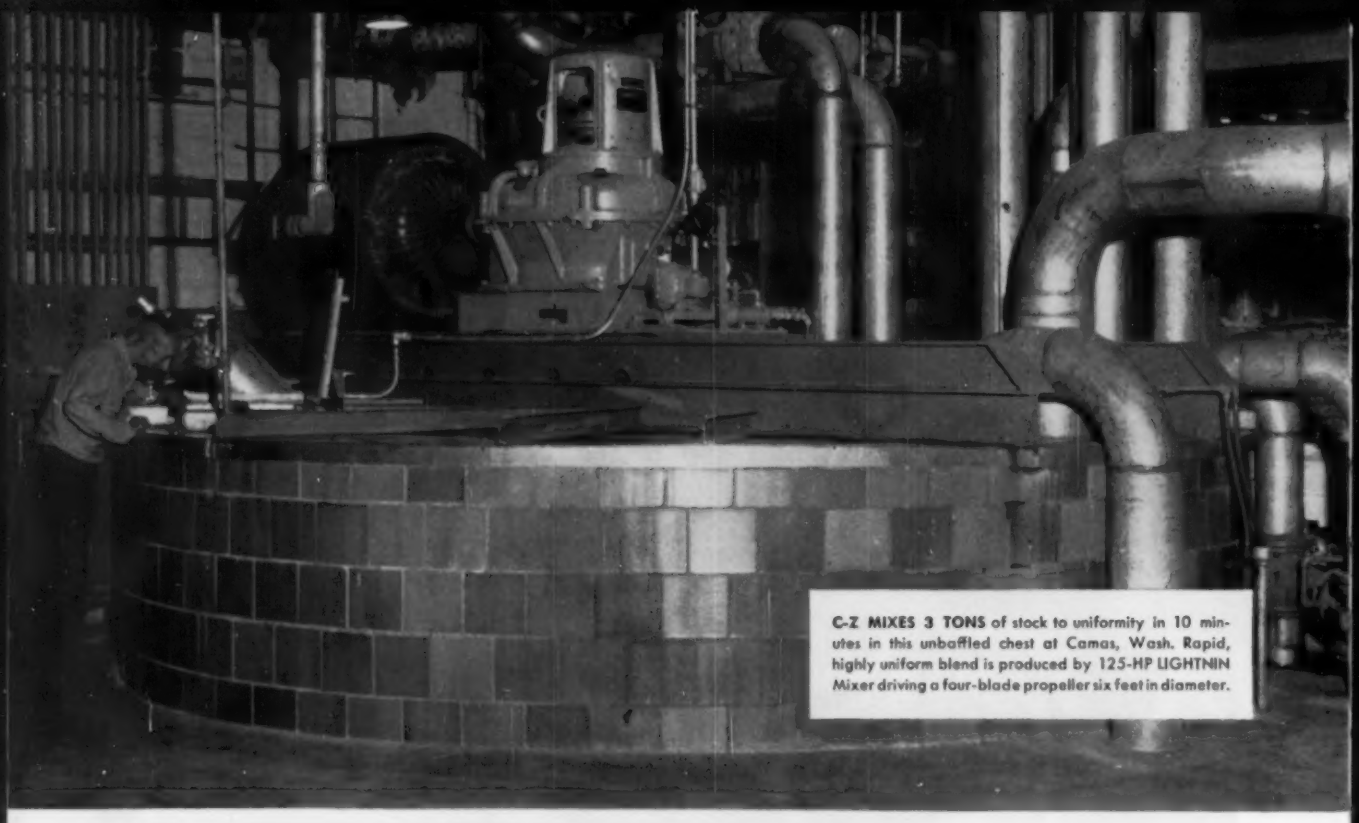


C-Z MIXES 3 TONS of stock to uniformity in 10 minutes in this unbaffled chest at Camas, Wash. Rapid, highly uniform blend is produced by 125-HP LIGHTNIN Mixer driving a four-blade propeller six feet in diameter.

New mixing unit puts **accuracy** *into Crown Zellerbach stock chests*

How can you minimize the effect of changes in stock consistency?

Here's how Crown Zellerbach does it, with a 125-horsepower LIGHTNIN Mixer, on No. 9 Mixing Chest at the company's large Camas, Wash., mill.

Mixes 3 tons in 10 minutes

This chest handles 25 batches or 75 tons of 3½-4% stock per 24-hour day. Furnish usually consists of groundwood and special bleached stocks of varying consistencies. Cycle allows 30 minutes for filling the chest, only 10 minutes for blending, 10 minutes for pumping out to the first beater chest.

In 10 minutes or less, the LIGHTNIN Mixer equalizes three tons of stock and *keeps* it equalized. During blending, *uniformity of stock varies less than 0.2% between any two points in the chest at any time.*

No guesswork

This high uniformity eliminates "ups and downs" in consistency of stock leaving the chest. It insures most uniform possible feed to the beater system. A consistency regulator is used to control finished batch before stock is discharged to chest.

Measurable results

Want to get performance like this out of your chests? Put LIGHTNIN Mixers into them. Get *results you can measure*—in terms of uniform stock, shorter blending time, tighter control of color, less machine downtime.

For the facts on stock-chest mixing that does what you want it to do, call in your LIGHTNIN Mixer representative. You'll find his name in Thomas' Register. Or write us direct.

Lightnin® Mixers

MIXCO fluid mixing specialists

FOR LATEST MIXING INFORMATION and full description of LIGHTNIN Mixers, send for these helpful bulletins:

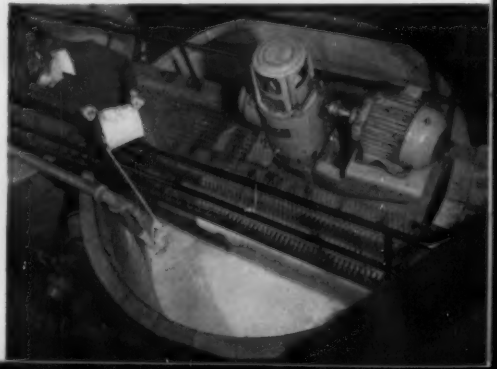
- ☐ B-102 Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP
- ☐ B-103 Top entering; propeller types: ¼ to 3 HP
- ☐ B-108 Portable: ⅓ to 3 HP
- ☐ B-104 Side entering: 1 to 25 HP
- ☐ B-112 Laboratory and small-batch production types
- ☐ B-109 Condensed catalog showing all types
- ☐ B-111 Quick-change rotary mechanical seals for pressure and vacuum mixing
- ☐ Paper stock mixing data sheet for figuring mixer requirements

Check, clip, and mail with your name, title, company address to:

MIXING EQUIPMENT Co., Inc., 172-j Mt. Read Blvd., Rochester 3, N.Y.

In Canada: Greey Mixing Equipment, Ltd., Toronto 19, Ont.

IN BEATER CHEST or machine chest, you can bring stock to full uniformity in as little as 6 minutes with a LIGHTNIN. You can get uniform color dispersion in as little as 2 to 3 minutes.



Business Picture Good, But!

Business improvement continues. There are numerous indications that 1959 may prove to be the most prosperous year this country has ever had. There are several factors in the wind which could change this picture. If an auto strike should materialize (at time of writing this it seems less likely), it could upset the recovery pattern because our over-all economy is unfortunately closely tied in with the Detroit operations. A sudden and serious reversal of the stock market's over-optimism could shake the confidence of businessmen and have far reaching effects. The third factor is the danger of war in the Far East, even a limited one. Undoubtedly the immediate effect would be to spur the economy upwards but accompanied by surging inflation.

Growing Signs of Selective Expansion

Recent announcements of plans for installation of new paper machines, such as mentioned in this issue, are indications of growing strength in certain areas of the industry. Note that these are segments which have not been deeply involved in the recent over-expansion program.

New Trade Act Has Safeguards

The Trade Agreements Extension Act of 1958 empowers the President to undertake new and deeper tariff-cutting trade pacts for an additional four-year period. However Congress legislated into the Act major safeguards which call for more effective and expeditious remedies for American industry and labor adversely affected by tariff agreements. The big problem in administering the provisions will be politics. Pressure groups will seek to use the safeguarding provisions unjustifiably in their favor and local businessmen will similarly put pressure on their local congressmen to obtain special consideration.

Pulp Improves in July

Total pulp production in July was off 2% from a year ago. Domestic shipments were comparably down 10% and exports 32%. A comparison of the first seven months of this year versus last shows production —4%; domestic shipments —13%; and exports —18%. An analysis of production by grades of the first seven months of 1958 versus same period in 1957 shows: dissolving —14% (domestic shipments —17%, exports —11%); bleached sulphite —4% (domestic shipments —16%, exports —49%); unbleached sulphite —17% (domestic shipments +3%, exports —55%); bleached kraft +4% (domestic shipments —10%, exports —5%); semi-bleached kraft same (domestic shipments +10%, exports —34%); unbleached kraft —5% (domestic shipments +5%, exports +1%); semichemical —6%; groundwood —6%.

Waste Paper Consumption

Usage of waste paper in the first six months was off 1.5% compared with the first half of last year. Receipts at the mill were off 3%. Consumption and receipts in July and August of this year were up considerably and we would estimate that they surpassed the summer months of 1957. Very strong demand in mid-September for even the lowest grades is reflected in higher prices.

Roofing Rags Moving Up

Price increases for roofing rags in all markets reflect the increased demand for roofing products which in turn is the result of increased industrial and home construction.

Merfenel 51*

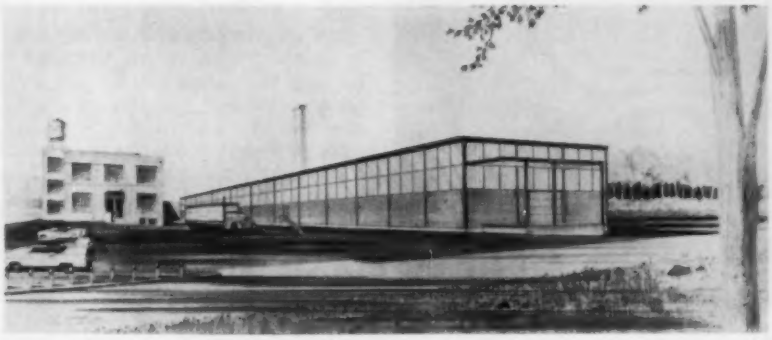
*PACKED IN ONE AND TWO OUNCE ENVELOPES

A new Product

FOR
SLIME CONTROL
•
MOLD PROOFING
•
PRESERVATION OF
STARCHES AND PROTEINS

R. T. VANDERBILT CO. INC.

230 Park Avenue, New York 17, N. Y.



Expansion at Peninsular Paper Co.

The Peninsular Paper Co. has announced plans for a major expansion of facilities at their plant in Ypsilanti, Mich. According to Daniel T. Quirk, president, work will start within a month on a two-story, 34,000-square-foot building addition. The building will initially be used as warehouse space for Peninsular's stock lines of cover and colored specialities. However, the new space has been specifically designed to accommodate a new paper machine operation planned for the future.

H. F. Campbell Engineering Co. of Detroit designed the new Peninsular structure, with Z. T. Gerganoff, AIA, of Ypsilanti as consulting architect.

The new machine will be wider, faster, as well as incorporating a breaker stack, horizontal press, and many new papermaking control features. It will be devoted to the manufacture of ledger, index bristol and other heavier weight papers.

Schedules call for completion of the program in the spring of 1959.

Gilbert Paper Co. to Install New Machine

Gilbert Paper Co. announced plans for replacement of its No. 2 paper machine with a new machine which will have about 30 per cent greater capacity. Principal sections of the new machine will be supplied by Valley Iron Works.

Paper and Board Production

According to the American Paper and Pulp Assn., the ratio of the United States production to mill capacity for the week ending August 30, 1958, was 89.3 per cent compared with 91.1 per cent revised for the preceding week. The ratio was 89.6 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending August 30, 1958, was 95 per cent compared with 92 per cent for the preceding week and 95 per cent for the corresponding week last year.

(Detailed statistics on page 30.)

Mechanicville Joins United Papermakers

Employees of the Mechanicville, N. Y. mill of the West Virginia Pulp and Paper Co. have voted to be represented in collective bargaining by the United Papermakers and Paperworkers, AFL-CIO.

They chose UPP to replace District 50 of the United Mine Workers which had represented them for the last 14 years. The vote for UPP was 712 to 113. This election gives UPP representation rights in all Westvaco's organized mills plus ten box plants of its subsidiary, Hinde & Dauch.

Dissatisfaction with District 50 began several years ago when the Mechanicville group was invited to pre-bargaining conferences by the UPP Westvaco locals. While the Mechanicville local leaders and members were eager to exchange ideas and lay common bargaining plans with other Westvaco union bargainers, District 50 took a firm position against communications between their local and those affiliated with AFL-CIO internationals.

Nineteen months of litigation, agitation and education preceded the NLRB poll. It began in February 1957 at a meeting attended by over 400 Mechanicville mill workers, who voted unanimously to disaffiliate from the coal miners' subsidiary and join UPP.

St. Regis Gets Control of Grower Container

St. Regis Paper Co. announces that on August 28 it declared effective its offer of exchange for the shares of outstanding capital stock of Growers Container Corp. stock. Approximately 60 per cent of the Growers stock has been deposited in accordance with the terms of the offer of exchange. This is apart from the approximately 31 per cent held by St. Regis. Together this is a total of more than 90 per cent of Growers stock.

It is planned to conduct Growers business as a division of St. Regis. Growers manufactures corrugated shipping containers. Its three plants are located at Salinas and Fullerton, Calif., and Jacksonville, Fla.

New Method Developed to Study Pulp Structure

A new x-ray diffraction technique has been developed which permits a complete characterization of pulp structure in two days instead of the two weeks formerly required, according to Dr. L. R. Parks of Buckeye Cellulose Corp. in a paper delivered at the national meeting of the American Chemical Society.

The major feature of the new diffraction technique is simplicity. In the identification of cellulose phase type and in the measurement of crystallite size, a section of commercial dissolving pulp sheet is used without preliminary preparation. As long as the apparent density of the pulp sample is above a specified minimum value and the moisture level is within the usual commercial range, there is no effect from other factors, such as surface roughness and fiber orientation with the sample.

Inspect Noralyn's First Timber

J. H. Ainsworth, J. W. Natwick and A. J. Navarre inspect Noralyn Paper Mills Inc.'s first timber shipment. Several truckloads of hardwoods from Louisiana's swamplands have been shipped to the Herty Foundation. A four-week investigation is expected to supply engineers with necessary information on capacities and specific types of equipment which will be needed for the proposed newsprint mill.

Knowlton Develops Nylon Impregnated Paper

Developed especially for applications requiring superior wet strength and excellent abrasion resistance, Knowlton Brothers' nylon impregnated paper is said not to be affected by acetone and many other chemicals.

Heat and pressure can be applied to the paper to yield a very smooth finish and the paper still retains porosity. Water permeability of the unpressed paper is 21 c.c. in one minute through a two-inch diameter circle and under a head of two inches. After pressing at 250 pounds p.s.i. at 240°F. for two minutes, the water permeability is 12 c.c.'s.

The paper's exceptional resistance to abrasion is maintained in both wet and dry applications. Using a 10 CS wheel on a Taber Abraser, 20 revolutions make no impression in either the dry paper or paper soaked in water for twenty hours at room temperature. Tensile strength of a one inch strip before pressing is 58 crosswise and 88 lengthwise. After pressing, tensile is 92 crosswise and 118 lengthwise.

Lake States TAPPI Meets Next Month

The Lake States section of TAPPI will hold a two-day seminar on October 13 and 14 at the Institute of Paper Chemistry in Appleton, Wis.

The session will be conducted by Dean Henry Eyring of the University of Utah Graduate School, on "Some Recent Researches on Cellulose and some Fundamental Principles of Physical Chemistry."

Subject of the four lectures will be 1) development of physical principles needed to treat cellulose; absolute reaction rate theory, viscosity, diffusion; 2) viscosity and diffusion and what they reveal about cellulose; 3) swelling and osmotic pressure measurement of cellulose and cellulose products; 4) some important cellulose reactions.

The A. B. C. Symbol

When the Audit Bureau of Circulations symbol, shown at left, appears in a publication, it indicates that circulation facts on figures of the magazine are verified by independent audit, measured by recognized standards, and reported in standardized reports. These audited facts, available without obligation to interested persons, provide a factual basis for advertising rates, evidence of subscriber interest, facts on market coverage, and facts for appraising circulation quality and editorial vitality.

This symbol represents the standards by which the readers' voluntary response is measured. It testifies to the advertising value of the publication, and also serves as a constant guide to readers' opinion.

Paper Trade Journal carries its ABC symbol every issue of the contents page.

Northwest Assn. Starts Publication

First issue of a new publication, *Northwest Pulp & Paper News*, is being distributed today throughout Oregon and Washington.

Published by the Northwest Pulp and Paper Association of Tacoma, Wash., the publication is in the form of a newsletter.

"*Northwest Pulp & Paper News* will be mailed free to anyone interested in learning facts about one of the area's basic industries," the Association announced. "Purpose of the News is to report technical developments, resource conservation, multiple water use projects and economics of the industry."

Michigan Meeting on Cost Control

"Cost Control in the Paper Industry" will be the theme of a meeting planned October 2 for Kalamazoo area papermakers.

Afternoon and evening sessions at the Hotel Harris there will feature a panel and a prominent paper executive as speakers. Preparations are being handled by the Michigan Division, Superintendents Assn.; Kalamazoo Valley section of TAPPI and the Kalamazoo chapter, National Accountants Assn.

At 4 p.m. the program will be the panel of Bernard White, controller of Sutherland Paper Co.; Robert Miller, controller of the KVP Co., and Robert Wetnight, head of the accounting department, School of Business, Western Michigan University.

Dinner will follow at 6:30, with W. P. Gullander, vice president, finance, Weyerhaeuser Timber Co., Tacoma, Wash., as the principal speaker.

Penjerdel to Meet Oct. 10-11

The Pennsylvania-New Jersey-Delaware Division of the Superintendents Assn. will hold its 1958 fall meeting on October 10-11 at Bedford Springs Hotel, Bedford Springs, Pa.

The technical program will commence on Friday morning, October 10, with a panel discussion on wires for both fourdrinier and cylinder machines.

Friday afternoon will see a return of the popular informal papermakers' discussion groups. There will be two separate discussion groups—one, on the fourdrinier machine; the other, on the cylinder machine.

A technical session is scheduled for Saturday morning, October 11. Two papers are to be presented at this session.

Weyerhaeuser Names Pulp Sales Managers

The appointment of three regional pulp sales managers has been announced by Weyerhaeuser Timber Co.'s Pulp Division.

Robert L. Nash has been appointed manager of eastern pulp sales; Spencer M. Smith, manager of midwest pulp sales; and Roger N. Wiewel, manager of New England pulp sales.

Mr. Nash joined the company's Pulp Division at Everett, Wash. in 1943. He entered the sales department in the Chicago office in 1946 and moved to the New York sales office in 1949.

Mr. Smith worked in 1947 for W. J. Park and Sons, contractors who built the company's Springfield, Ore. pulp mill. He joined the Pulp Division in 1948, working at both the Springfield and the Longview, Wash. pulp mills before going to Chicago as district sales representative in 1949.

Mr. Wiewel joined the Pulp Division's construction engineering department in 1952. He subsequently served in the plant engineering department of the Pulp Division at Longview, as kraft mill shift superintendent at Longview, and on special assignment at the Everett, Washington pulp mills before entering pulp sales in 1957. Mr. Wiewel became New England sales representative in January, 1958, following retirement of David Bigelow.

Davis Promoted by Eaton Paper

Promotion of Churchward Davis to the post of assistant sales manager for Eaton Paper Corp. was announced by the Pittsfield, Mass. firm.

Mr. Davis has been with Eaton's for 11 years, and since the acquisition of the Nascon Products Division in 1947 has been merchandise manager for this Eaton division.

Cornell Safety Director Transferred

Henry Kvintus, safety director of Cornell Paperboard Products Co.'s Milwaukee plant for the past five years, has been transferred to the Carton Craftsmen Co., Cicero, Ill., a Cornell subsidiary. John Shepard, former personnel assistant, has been named safety director for the Milwaukee plant.

Joseph H. Maché

Elected to Far East Post

Joseph H. Maché, a Rayonier technical sales representative, has been elected a vice president of the company's Japanese subsidiary, Nihon Rayonier Kabushiki Kaisha, with executive offices at Osaka. There he will head the company's sales and marketing activities in the Far East.

World markets currently account for some 40 per cent of the firm's pulp sales, according to R. L. Plummer, manager of export sales.

Prior to joining Rayonier in 1955, Mr. Maché had been associated with E. I. DuPont de Nemours' rayon division at Buffalo, N. Y.

Tomassi Heads Corning Fibre

Joseph J. Tomassi, Jr., formerly a vice president of the Edgar Steiner Co., was elected president of Corning Fibre Box Corp., a subsidiary of Corning Glass Works. Robert S. Cole, president of the subsidiary since March, 1954, was elected vice president.

Changes in Shipping Staff at Herrings

Leonard O. Russell, converting and shipping supervisor at the Herrings, N. Y. mill of the St. Regis Paper Co. for 17 years, has retired. He is succeeded by Henry T. Vitrano, formerly shipping foreman.

Emery Ferguson, head cutterman in the finishing department, has been promoted to shipping foreman. He has been with the firm for 32 years.

Ream Named Ecusta Pulp Mill Supt.

A. M. Ream has been appointed pulp mill superintendent for the Ecusta Paper operation of Olin Mathieson Chemical Corp., Pisgah Forest, N. C. He succeeds R. C. Bullock, who has resigned.

Mr. Ream joined the company in 1941. Since 1951 he has served as technical assistant to the production manager, coordinating specialized activities of the electrochemical plant and the pulp mill.

In his new duties, Mr. Ream will have the responsibility of processing American flax fiber for the manufacture of Ecusta's cigarette paper and other lightweight papers.

N-E Promotes Hassett

Patrick J. Hassett has been named assistant superintendent of the kraft mill of Nekoosa-Edwards Paper Co., Port Edwards, Wis.

He has been technical assistant to the kraft mill superintendent since August 1957. He joined the company in 1953.

George O'Blenes

To Join Wiggins Teape Group

George O'Blenes, a graduate of the University of New Brunswick in mechanical engineering who has also carried out post graduate work at Laval University in fluid mechanics, is leaving Anglo Paper Products, Ltd., Quebec, with whom he has been working for the past three and a half years, to take up a post with the Wiggins Teape Group Research Organization in England. He then expects to remain in England about two years and will spend a year in Sweden before returning to North America.

Mr. O'Blenes has worked in the Papermaking Research Group under Jasper Mardon during his time with Anglo Paper Products, Ltd. and has co-authored a number of important papers that have gained him international recognition.

Bolduc Appointed Hennepin Supt.

Hennepin Paper Co. of Little Falls, Minn. is pleased to announce the appointment of Martin Bolduc to the position of paper mill superintendent.

Mr. Bolduc has had many years of practical experience in the manufacture of groundwood printing, converting and specialty papers. For many years he was employed as paper machine superintendent by Finch, Pruyn & Co., Glens Falls, N. Y. and was with the company a total of 29 years, and has just resigned his position as general mill superintendent of the Manistique Pulp & Paper Co., Manistique, Mich. He will take complete charge of manufacturing operations at Hennepin and will put the finishing touches on the company's recently completed installations of cleaning and air removal equipment.

Manistique Mill Chiefs Named

Andrew Maitland and Russell Fagan have been appointed alternating day and night paper mill superintendents by the Manistique Pulp and Paper Co., Manistique, Mich.

The two men, succeeding Martin Bolduc, will share supervisory duties over 36 employes. Mr. Maitland helped build the mill here and began making paper in May, 1920. Mr. Fagan has been with the company 33 years.

Japp Named Philip Carey VP

Paul D. Japp has been named vice president of the Philip Carey Mfg. Co., Lockland, Ohio.

Mr. Japp, who joined Carey in February, has been assistant executive vice president and manager of sales relations. In his new post, he will be responsible for the company's sales efforts on preferred and national accounts in engineering, government and exports.

Prior to joining Carey, Japp was vice president of the Pittsburgh Corning Corp., Pittsburgh, Pa.

Wheeling Corrugating Names Sales Manager

Gilbert M. Long has been appointed general sales manager, Wheeling Corrugating Co.

Mr. Long joined Wheeling Corrugating as a clerk at the Columbus branch in 1937. From 1938 to 1946 he was in various sales capacities, including district sales manager in Wheeling and assistant to manager at the Long Island City, New York branch. Since 1946 he has managed the Columbus branch.

Rap-In-Wax Buys U. S. Packaging Corp.

In a joint announcement, J. J. Ahern Jr., president of Rap-In-Wax Paper Co., and P. M. Grieve, Rap-In-Wax executive vice president, stated that the Minneapolis flexible packaging firm had acquired ownership of United States Packaging Corp. of Paterson, N. J., a manufacturer of polyethylene coated cellophane, polyethylene coated Mylar, and other pouch materials. The purchase was made by an exchange of stock, and an undisclosed amount of cash.

By acquisition of U. S. Packaging, said Mr. Grieve, "Rap-In-Wax will greatly increase its activities in flexographic film printing and in polyethylene extrusion coated products. In addition to far broader and deeper sales coverage, achieved by combining our sales forces, we also will be able to provide more personnel and facilities for the physical research."

A. R. Cozzolino will remain U. S. Packaging president, and G. C. Rickelmann will remain the company's vice president and plant manager. The new ownership immediately installed a new board of directors: A. R. Cozzolino, U. S. Packaging president; J. J. Ahern, Jr., Rap-In-Wax president; P. M. Grieve, Rap-In-Wax executive vice president; and A. E. Sloan, Rap-In-Wax director of industrial-commercial sales. J. C. Klettenberg, former Rap-In-Wax sales accounting manager, was elected secretary-treasurer.

Polyethylene Coating Firm Formed

The formation of a new polyethylene coating firm has been announced by Stanley and Jerry Warshaw, former vice presidents of Atlantic Gummed Paper Corp.

Plastic Coated Paper Corp., name of the new company, will occupy permanent quarters at 210 Miller Road, Hicksville, Long Island, N. Y., in a new one-story brick and steel plant now being built by Mardan Construction Co. Target date for completion is late '58.

Plastic Coated plans to coat paper, board, foil, in addition to other materials.

Until the Hicksville plant is completed, the corporation is maintaining temporary headquarters at 550 Fifth Ave., New York 36, N. Y.

Other executive posts in the corporation include Jerry Warshaw, executive vice president, and Ken Rawson, general sales manager. Mr. Rawson formerly was sales manager of the Gilman Paper Co.

Carton for Shipping, Handling Batteries

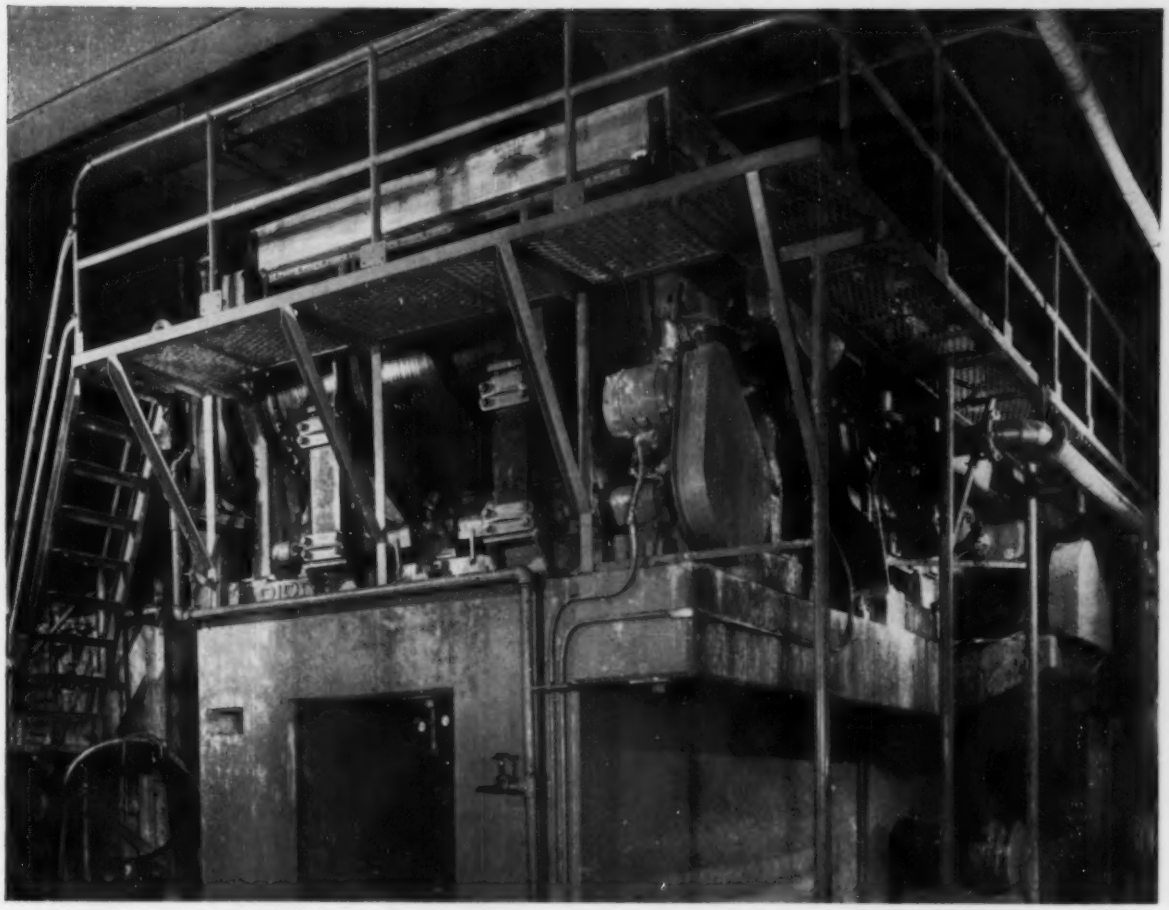
An unusual carton, featuring a dual-function shock absorber, has been developed by Exide Industrial Division of the Electric Storage Battery Co., Philadelphia, for shipping and handling its new AC light-plane batteries.

The multiple-purpose carton not only makes it convenient for the manufacturer to ship the batteries safely in pallet-loads or smaller lots, but also simplifies handling by distributors, dealers and users.

Separate carton parts, ready to be assembled, include a pad under the battery of expanded polystyrene, one inch thick, which acts as a shock absorber during shipment and also can be used in the plane's battery compartment, when needed for a snug fit, to give extra protection against shock and vibration.

One staple seals the carton, ready for quantity shipment. For shipment in quantities of four or less the top is folded into a carrying handle.

When a distributor, dealer, or airframe manufacturer is ready to fill a dry-charged battery for service, he can do so without removing the battery from the carton. He merely opens the top of the carton, pours electrolyte into the battery, then refolds the carton top into a carrying handle for additional transport to the actual points of installation.



At the HEAD of the PAPER MACHINE...

When it Comes to Uniformly Good Quality of Output

Big, modern Bird Screens guard against rejects and shutdowns by removing dirt and foreign matter from the stock just before it flows onto the machine wire.

They deliver the stock uniform in weight, free of lumps, strings and slime — stock with the fibres combed out and individualized to assure good formation — stock that contains nothing that can do damage to delicate machine wires or scratch polished roll surfaces.

Regardless of what other dirt removal methods and equipment you employ, Bird Screens belong at the head of *your* paper machine.

BIRD MACHINE COMPANY
SOUTH WALPOLE, MASSACHUSETTS
REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND, OREGON • ATLANTA 9, GEORGIA
Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND CO., Limited, Montreal

BIRD SCREENS

Boise Stockholders Approve Merger

Stockholders of Boise Cascade Corp. have approved a proposed merger with the Ames Harris Neville Co. of Portland, Ore.

Stockholders of the Portland firm are being polled by mail on acceptance or rejection of the merger.

Ames Harris Neville manufactures paper and burlap sacks, canvas products and outdoor furniture. Boise Cascade operates lumber mills and other timber products industries.

William P. Katz

Katz to Head Gibraltar's Display Div.

William P. Katz has been appointed vice president, Display Division of Gibraltar Corrugated Paper Co., Jersey City and North Bergen, N. J. Gibraltar manufacturers merchandising display materials, point-of-sale displays, and corrugated shipping containers.

Mr. Katz succeeds S. Paul Boochever who recently resigned. Mr. Katz will spearhead an integrated program to aid marketing and sales promotion departments of customers in developing the most effective point-of-purchase displays.

Mr. Katz has been with Gibraltar since 1946. Prior to assuming his new post, he was vice president of production for all divisions of Gibraltar including paper mill, corrugated box and display. In this capacity, he was responsible for planning and operations at the North Bergen and Jersey City plants.

Apponaug Engraving Forms New Corporation

Apponaug Roto-Graving Co., formerly the photo engraving department of Apponaug Finishing Co. has been formed into a new corporation which will have no affiliation with any printing company. It will produce engraving copper rolls or cylinders for printers of textiles, plastics, foils, paper and the packaging trade, specializing particularly in the photo engraved reproductions of continuous tone and continuous repeat color separation designs.

The present location will be maintained in Apponaug, R. I. Robert M. Johnson, who has been affiliated with engraving at Apponaug for over 20 years, is president, and Robert Powers, formerly with the Dennison Mfg. Co., will be production manager.

141 Miles of Wax Paper Hidden in a Newspaper

Badger Paper Mills Inc. of Peshtigo, Wis. recently ran in the St. Louis Globe-Democrat a full page ad printed on the firm's "Freshrap" wax paper. According to the publication this is the first time a manufacturer has inserted a usable sample of a consumer product in a newspaper.

Utilizing some 141 miles of wax paper, Badger may have a good promotion idea, but woe to waste paper consumers around St. Louis.

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

1958	Aug. 2 89.4	Aug. 9 89.0	Aug. 16 90.5	Aug. 23 91.1r	Aug. 30 89.3
1957	Aug. 3 89.9	Aug. 10 90.1	Aug. 17 91.6	Aug. 24 92.2	Aug. 31 89.6

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1957	94.2	97.0	97.1	94.0	94.6	93.3	75.6	90.7	86.0	93.0	90.7	81.5	90.9
1958	86.9	89.5	89.5	88.1	86.4‡	86.2‡	76.0‡	—	—	—	—	—	—

‡Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1951	1952	1953	1954	1955	1956	1957	1958
Year to Date	99.3	90.8	92.9	91.6	94.9	98.8	91.7	85.8
Year Average	98.0	88.6	92.3	91.6	94.0	97.9	90.9	

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

1958	Aug. 2 93	Aug. 9 92	Aug. 16 93	Aug. 23 92	Aug. 30 95
1957	Aug. 3 95	Aug. 10 92	Aug. 17 94	Aug. 24 95	Aug. 31 95

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1958	80	86	88	84	84	86	76	—	—	—	—	—	—
1957	91	94	94	92	93	91	72	94	91	97	92	79	90

† *Percents of operation based on "Inch-Hours" reported on a 6-day basis.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING August 30, 1958	LAST WEEK ENDING August 23, 1958	CUMULATIVE TO DATE Jan. 1 to August 30, 1958
% Activity	95%	92%	85%
	Tons	*Tons*	*Tons*
Total Production	307,590	293,915	9,052,471
Liner	104,573	96,909	2,991,545
Corrugating Material	46,472	44,116	1,354,426
Chip & Filler Board	4,211	5,385	165,629
Total Containerboard	155,256	146,410	4,511,600
Folding	60,712	54,345	1,756,852
Set-Up	12,405	13,204	360,564
Special Food Board	30,161	25,824	863,518
Other	49,056	54,132	1,559,937
Total Boxboard	152,334	147,505	4,540,871
Total Orders	*Tons*	*Tons*	*Tons*
Received	299,431	275,008	
Unfilled End of Week	407,334	419,411	

Modern Methods of Mechanical Pulp Manufacture

. . . a new book to be published this month, comprehensively covers all aspects of groundwood pulp production. The author, K. H. Klemm, has a broad knowledge of groundwood manufacturing methods and has been associated with groundwood mills on both sides of the Atlantic.

Divided into three main categories, the first section of the text is about the raw material wood. The heterogeneity of wood, effects of pulpwood quality, aspects of wood handling, storage, barking and woodyard systems are discussed. Another section is devoted to the groundwood mill and covers theoretical aspects of production, factors influencing grinder capacity, modern grinder types, grinder drives and governors, coarse screening and rejects recovery, groundwood quality, routine testing and control methods, instrumentation, grinder control and control documentation. Stock preparation is discussed in a third section. White water systems, screening equipment, methods and principles, theoretical considerations of screening systems, thickening, bleaching, stock chest and storage systems, plus descriptions of the fraction mixing process, the brown process, chemical treatment processes, mechanical pulp from disk refiners, and a comparison of the various groundwood pulps are included.

Offered at a special pre-publication price of $4.00 (cash with order) until October 1, 1958; the 241-page text will be valuable to experienced groundwood mill men as a reference, and to those with a less comprehensive knowledge of the field, it should serve as a useful textbook. Regular price: $5.00.

Lockwood Trade Journal Co.
49 West 45th Street **New York 36, N. Y.**

Aspen, the mainstay in Box Board's raw material supply.

American Box Board Aims at a Continuing Pulpwood Supply

Arthur Koller

Woodlands Manager
American Box Board Co.

American Box Board Co.'s Filer City mill has become the Lake States' largest pulpwood-using installation. Recent completion of a new bleached kraft paperboard mill puts capacity pulpwood requirements at more than 300,000 cords a year. Paper Trade Journal editors invited Box Board's woodlands manager, Arthur Koller, a 33-year veteran at Filer City, to tell our readers of the company's woodlands programs aimed at a continuing pulpwood supply from Michigan's highly populated lower peninsula. Here is Mr. Koller's story:

Many residents of the highly industrialized southern part of Michigan's mitten-shaped lower peninsula still think of the counties directly to their north as "stump prairies," with little timber to show but the long-lasting stumps remaining from the big pine harvests of a half-century ago. Enlightened citizens, however, have come to realize that within the last decade the aspen timber growing on former pine sites has become the base of a rapidly expanding economy in this part of Michigan. Our mill is perhaps the prime example of what this second-growth timber has come to mean to the "North Country."

Soon after American Box Board took over the pulp and paperboard mill at Filer City in 1947, the northern area's economy began to feel a surge from pulpwood dollars. Research had paved the way to utilization of aspen (sometimes called "popple") to produce a superior corrugating medium for shipping containers. Up to this time the mill had produced kraft paperboard from pine pulpwood, most of which was imported from Canada, Minnesota and Michigan's upper peninsula.

With an abundant supply of aspen pulpwood practically on the mill's doorstep in the 31 northern counties of the lower peninsula, Box Board's management rapidly converted the mill to meet the demand for the new product. Michigan "popple," within truck-haul distance, became the new pulpwood source and the use of imported wood was discontinued. Continuous studies of the 31 county area have led to expansions of capacity—within limits of assured pulpwood supplies to meet future needs.

Almost continuous expansion programs at Filer City since 1947, combined with the move to close-to-home pulpwood, has zoomed the mill's consumption of Michigan-grown pulpwood from only 30,000 cords in 1947 to a present capacity need of more than 300,000 cords per year. Timberlands controlled through acquisition and long-term lease form the basis of the company's program to assure a continuous supply of pulpwood for future needs. This procurement program has been continually enlarged to keep pace with the added requirements of new mill facilities and the anticipated needs of other mill products now being studied.

"Multiple Use" of Forestland

We emphasize the "multiple use" principle in the management of all timberlands and particularly on the forest lands in our procurement area. It is doubly important in these 31 counties as they provide one of the nation's prime vacation and resort areas. The tourist and resort industry, which depends on the forests, ranks along with automobile production in Michigan's economy. Effective management of timberlands is the key to the forest economy on which the whole area depends.

Tree farming for private land owners can, and, in more and more cases, is

proving to be beneficial to the owner's primary use of the land—which may be hunting, fishing or other recreation. Perhaps the most worthwhile job our woodlands department is doing, other than the daily feeding of pulpwood to our mill, is to nurse this growing public interest in tree farming and multiple use of forestland.

Land ownership throughout the lower peninsula of Michigan strikes an average familiar throughout the nation: ⅓ in public — state and federal — ownership, with a vital 2/3 held privately. Largest single private land owner, with more than 100,000 acres, is a power company with an extensive forestry program. Next in size are the many private hunting clubs with forest lands ranging from a few hundred to as much as 30,000 acres each. Remaining, of course, is the bulk of the forest, held by more than 25,000 farmers, individuals or firms.

It is evident that much of Box Board's forestry efforts must be beamed toward the private land owner, be he farmer, stockholder in a hunting club, businessman, or whatever. Selling these thousands of persons in the principles and practices of forestry is an integral part of the job; perhaps in the long run, the most important part. First target in our campaign was determined to be the peninsula's tremendous acreage of rapidly maturing (in some cases already overmaturing) aspen forests. Top company management, sparked by conservation-minded Senior Vice President Gordon B. Bonfield, was quick to see the need of action.

To gain the best in aspen management "know-how," American Box Board Co. became the largest contributor to the University of Michigan's Memorial Phoenix Aspen Research Project, initiated in 1951 and completed in 1954. This was the first comprehensive study of the ecology of a tree species ever completed, and Box Board hired one of the project's scientists, Casey E. Westell Jr., a forest and wildlife ecologist. Mr. Westell, working under Chief Forester Rowland W. Blair, immediately plunged into the task of selling aspen management to Michigan land owners, with special emphasis directed toward the large hunting club ownerships.

"Hunt Club" Program

Thus, the company's nationally known deer and aspen, or "Hunt Club" program was born, a plan whereby the company provides forest and wildlife management planning for the clubs under 30-year written agreements. These agreements provide that all pulpwood harvested be sold to American Box Board Co. at a fixed price which is renegotiated at three-year intervals. Benefits to the clubs are many, with

Senior Vice President Gordon B. Bonfield presents a Tree Farm Family membership sign to Hubert Harthun, the first member of the company's new program.

Ronald and Shirley Kamaloski of Manistee, Mich. are shown planting spruce trees with the American Box Board planting machine.

Logging aspen pulpwood for the ABBCo. mill, Wallace Humphrey of Bear Lake, Mich., manages his timber under the company "Family" plan.

wildlife and multiple use considerations integrated with timber harvests. Benefits to the company include the assured pulpwood supply from the tremendous acreage now leased by the company in this manner. This supply has been vital in raw material planning which led to recent multi-million dollar expansions.

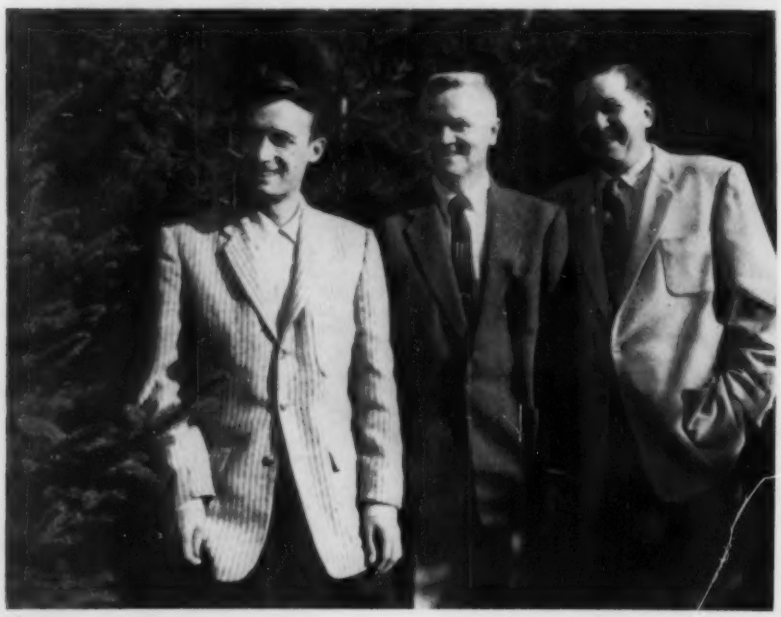
The great amount of research carried on by industry, the universities, and state and federal forest agencies, backed by a cooperative attitude on the part of the experts concerned, was carried to the public. Opposition to the application of the aspen management programs centered largely upon the control of the Michigan deer herd. Forest managers and wildlife experts still have to buck strong efforts, mainly from certain organized hunting and fishing groups, aimed at stifling any application of scientific management to forests and deer. But enlightened citizens see the need for "in balance" harvests of both deer and timber products.

Otto Sekanina of Wellston, Mich., with a pile of jackpine pulpwood just harvested.

The "Deer and Forest" Story

The basic problem was this: Forest managers recommended clearcutting mature aspen stands to assure best production, but also advocated some control of the deer herd to avoid the predicament of having all new young growth rapidly devoured by undernourished deer. Research had definitely established that the herd had grown out of proportion to its food supply through decades of inadequate harvest, and more deer had to be harvested annually to insure a healthy herd. These advocates of bigger deer harvests to keep the herd within the food capabilities of the range were subject to barrages of spiteful blasts from some hunters, clubs, and resort operators.

Aid of American Box Board's Public Relations Director W. G. Schopf was enlisted, and the "deer and forest" story was carried to the public by press, radio and television. "Deer and Aspen," a four-color booklet containing a popularized version of the facts from the Memorial Phoenix Aspen Research Project, was published by Box Board and given wide distribution. Other agencies contributed greatly to the total educational effort, and a measure of success was won: The Michigan Conservation Department was given discretionary control of the deer herd, resulting in special "any deer" seasons aimed at keeping the herd high in number and quality, and in balance with the food supply. The battle still rages within the state, but forest managers have succeeded in getting the pendulum of public opinion to change as a result of their findings.



Casey Westell Jr., forest and wildlife ecologist; Rowland Blair, chief forester; Arthur Koller, woodlands manager.

Pulpwood Procurement

During the decade of Box Board's expanding activities at Filer City, the woodlands department has grown from a two-man staff to one of 15 persons, which includes seven trained foresters. A field wood procurement office staffed by five men under the immediate supervision of regional superintendent Ivan Owen, has been established at Mio, Mich., 140 miles east, across the state, in the heart of the hunting club country. Mr. Owen's crew, in addition to servicing the hunting clubs, supervises pulpwood production on several large public timber sales in the area.

With Box Board's move into the bleached kraft field, the Mio area had taken on increased importance. The natural stands of jackpine controlled in the Mio area make up a large part of the available supply to assure pulpwood for the 150-ton daily production requirements of Box Board's new bleached kraft mill. In 1957, a substantial portion of all the Filer City mill's wood came from the dozen or so northeastern Michigan counties served through Owen's field office.

The bulk of the company's pulpwood is hauled to Filer City by trucks, with a small amount transported by rail. Trucks range in size from the two-cord rack of the local farm woodlot producer to the big diesels hauling double-bottom trailers with 16 cords or more on a load. Highly mechanized, super-efficient loading and hauling is the key to success with producers making truck-hauls of up to 200 miles one way. All company wood is hauled by independent logging contractors, with weekly hauling quotas, excepting the smaller amounts from the local area trucked by individuals who harvest their own trees under a plan known as the "American Box Board Tree Farm Family."

"Tree Farm Family" Plan

By early 1957, with the Hunt Club program going well, and its attendant development of numerous independent producers, it was apparent that the huge pulpwood potential in smaller private

holdings right at the back door of the mill—within 50 or 60 miles—must not be neglected. Sizeable producers tended toward operations in bigger blocks of timber, while area tree farmers with timber holdings of from a few acres to a few hundred found it hard to market their maturing crops of pulpwood without a quota at the mill. Senior Vice President Gordon B. Bonfield suggested formation of a special plan not only to provide a better market for wood from the smaller holdings, but at the same time to build up the timber potential of this large and close-to-the-mill acreage by providing free services of company technically trained foresters to woods owners through a "Tree Farm Family" plan.

In the spring of 1957, John Calkins —former American Forest Products Industries district manager, and Larry Brink—former Soil Conservation Service forester, joined the woodlands staff and the American Box Board Tree Farm Family plan was born. Basics of the plan are this: Under a gentlemen's agreement (no papers are signed) private woodland owners in five counties surrounding Filer City receive free assistance from company foresters in return for which they pledge their pulpwood crop to the company at current market prices.

In October, 1957, the "family" plan was launched at a formal dedication during which Bonfield presented membership signs and cards to 33 charter members of the plan with a total of 2,700 acres. Since then, memberships and acreages have grown tremendously. Cutting programs are sceduled for members according to individual needs of their woodlands and they are allowed to bring pulpwood harvested directly to the mill woodyard. Company Tree Farm foresters use the inducement of a guaranteed pulpwood market to sell the best possible forest management to the owners.

Raw Material for the Future

Interest in the Tree Farm Family plan continues to be high, and Box Board management is sure that the best way to sell good forest practices to individuals is through this practical approach with its built-in marketing plan. If timber production is to be increased, experts have proven, the largest potential is on the smaller private holdings. Woods owners who have realized benefits through the Tree Farm Family readily become salesmen for American Box Board Co. and good forestry practices in general. Already, many hundreds of acres of potential pulpwood land have been improved through the help of the program.

It is easy to see why American Box Board's programs of cooperation with private landowners have grown to such importance. Present mill expansions have already been based—at least partially—on the ability of the Hunt Club plan to provide raw material far into the future. Tomorrow's expansions will be based on increasing the amounts of timber produced by other private tree farmers.

Paper Trade Journal | NEW LITERATURE

B & W Cold Drawn Mechanical Tubing

Explains how smooth inner diameter welded carbon steel tubing is produced and how the fabricator can cut production time and reduce costs in the manufacture of hydraulic cylinders. Also includes tables for micro-inch finish. Bulletin TB-428. Babcock & Wilcox Co., Tubular Products Div., Beaver Falls, Pa.

Esco Log Grapples

Gives general information and specifications of the heel boom. Also includes close-up photos, as well as action shots of each grapple in field use. Catalog 207B. Electric Steel Foundry Co., 2141 N. W. 25th Ave., Portland, Ore.

Facts for Industry

Contains ten statistical tables on pulp, paper and board for the year 1957. Series M26A-07. Price 10c per copy. Bureau of the Census, Washington 25, D. C.

High Frequency Equipment

Points out the value of this equipment for increasing the output or increasing efficiency of high-production machinery. Also gives application and engineering information on two types. Bulletin 2250. Louis Allis Co., 427 E. Stewart St., Milwaukee, Wis.

Ohio Injector Valves

Lists over 95% of their line in this condensed catalog CD-2. Includes a section on brass joint valves and corrosion resistant valves. Ohio Injector Co., Wadsworth, Ohio.

Really Flat Gummed Paper Selector

The simple to use slide rule eliminates the many long, complicated charts and guides printers have required in the past. Mid-States Gummed Paper Div., Minnesota Mining & Mfg. Co., 6850 S. Harlem Ave., Bedford Park (Argo P.O.), Ill.

Reliance V-S Drives

Illustrates in full color photographs, brief copy and diagrams how these drives operate and may be applied to various types of machinery in all industries. Also lists condensed drive specifications, dimensions and accessories. Bulletin D-2506. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

What You Should Know About DC Insulation Testing

Tells what it is, how it works, about other types and the reliability of this system for motors, generators, and power transmission cables. General Electric Co., One River Rd., Schenectady, N. Y.

Hankinson Condensifilters for Condensed Air

Describes and illustrates Models M-100-T and M-30-T for filtering and dehydrating compressed air and gases. Bulletin 4158. Hankinson Corp., College & Pine, Canonsburg, Pa.

Special Function Gages and Valves

Gives features, application information, pressure-temperature ratings, and specifications. Data Unit No. 103. Jerguson Gage & Valve Co., 80 Adams St., Burlington, Mass.

SpeedMaster Gear Reducers

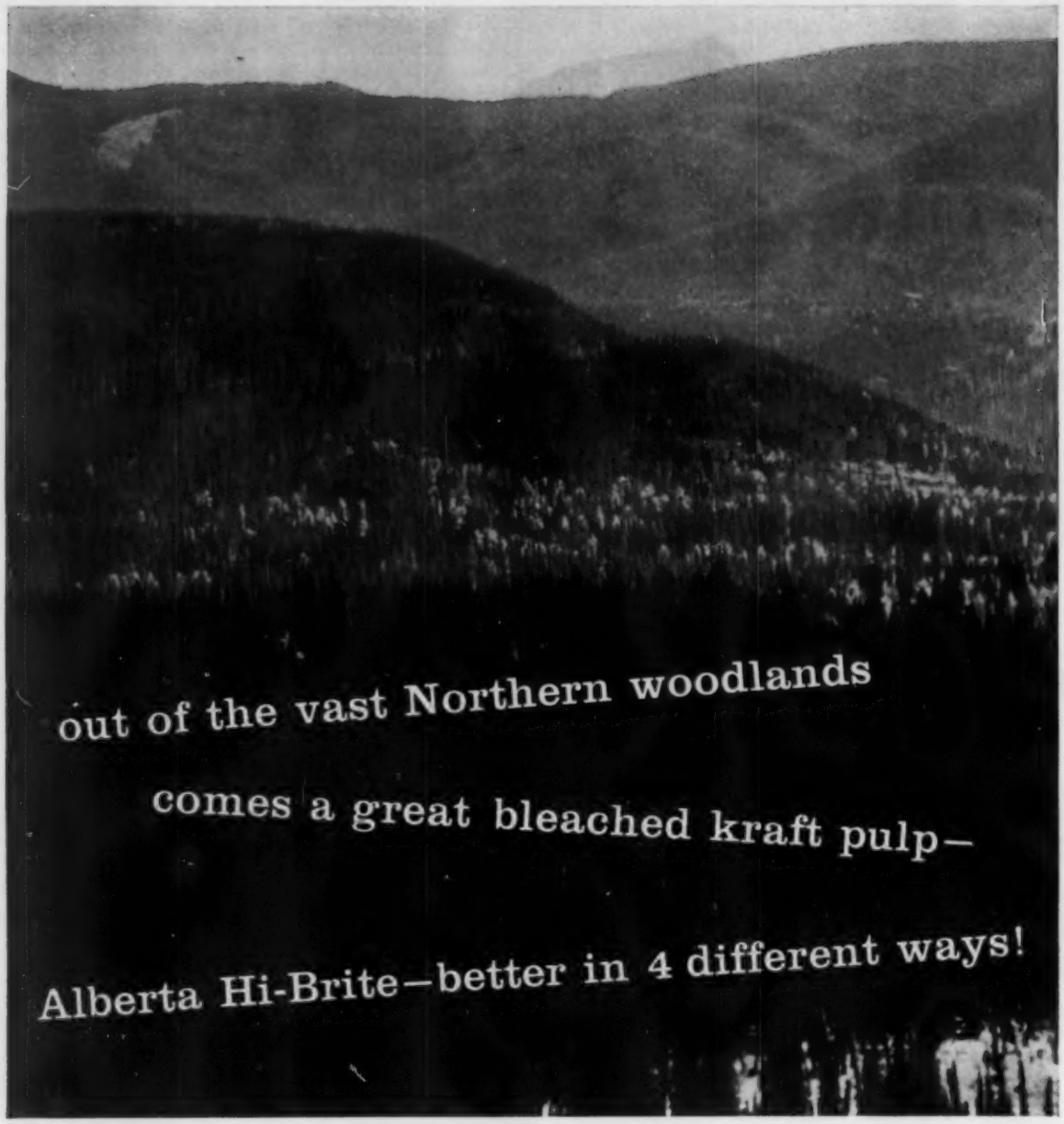
Describes these reducers which feature double helical hardened gears, heavy duty antifriction bearings, mounted in rugged ribbed housings with efficiency ratings of 98% or better at full load. Catalog 5802. Western Gear Corp., P.O. Box 182, Lynwood, Calif.

Alcoa Aluminum Electrical Rigid Conduit

Outlines briefly the mechanical and electrical advantages of aluminum rigid conduit. Also gives specific installation instructions and a comprehensive table of dimensions and weights. Booklet. Aluminum Co. of America, 749 Alcoa Bldg., Pittsburgh 19, Pa.

Barometric Condensers

Covers condenser theory, design features, construction, operation, and application. Also includes sectional drawings in color to illustrate the equipment and explain operation. Bulletin 5aa. Dept. JA-13, Schutte & Koerting Co., Cornwells Heights, Bucks Co., Pa.



1 Alberta Hi-Brite is made from the long thin fibers of spruce and lodgepole pine . . . fibers famous for producing the best quality bleached kraft pulp. It imparts to your paper an unusually high degree of *folding and tensile strength* along with outstanding opacity and cleanliness.

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* "TI-PURE" *titanium dioxide is available from Du Pont's Pigments Department.*

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Du Pont Dyes AND CHEMICALS

some facts you should know

about fluorescent white papers

Because fluorescent white papers are a relatively new idea in paper making, they're bound to be questioned. Will they stand the test of time and use? We submit that they *have* stood it. We also believe that such papers will grow in popularity as more and more paper users—the ultimate jury—discover a brighter, clearer, more appealing product than has been available heretofore. The facts presented below are based exclusively on Du Pont's experience with its fluorescent white dye, Du Pont Paper White BP.

Are fluorescent white papers unreliable?

The answer, simply, is no. In five years of extensive field work with mills all over the country, Du Pont has had no serious complaints concerning papers dyed with its fluorescent white dye. Paper merchants and paper consumers are satisfied with the performance of these papers.

Do fluorescent white papers tend to fade or discolor in time?

Actual tests prove otherwise. Two lots of commercial sheets, made with our fluorescent white dye, were subjected to shelf and office cabinet tests for *four years*. Comparison of newly manufactured paper versus the controls showed no difference.

Tests have also shown that the fastness of papers made with Du Pont's fluorescent white dye is equal to, and in many cases better than, color stocks which have been accepted as standard grades for many years. Brightness fading is not a problem.

How does a fluorescent white dye affect the quality of a paper?

If quality means the physical value of a paper due to its pulp or rag content, a fluorescent white dye cannot, of course, change it. The quality of a paper, in this sense, can be no better than the pulp or fiber from which it is made. Fluorescent white papers made from pulps or fibers with good inherent lightfastness will retain it.

But if quality means the look of prestige a paper imparts; the clarity and contrast it provides for printed matter; the importance it gives to the message it carries; then the answer is yes. A good fluorescent white dye gives papers—particularly bonds and writings—a new, pleasing brightness. And it makes printing sharper, more readable. Isn't it a prime function of paper to do precisely that?

This sheet is fluorescent white. Judge it for yourself.

E. I. du Pont de Nemours & Co. (Inc.)
Dyes and Chemicals Division
Wilmington 98, Delaware

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A-5802

Application of Centrifugal Cleaners in a Board Mill Using Waste Papers

Centrifugal cleaners installed in the waste paper stock cleaning system have improved machine operation and greatly reduced dirt in the top liner sheet.

G. F. DeLong

Chief Chemist
Hinde & Dauch Paper Co. of Canada Ltd.
Toronto, Ont.

The Toronto Mills Division of the Hinde and Dauch Paper Co. of Canada, Ltd., operates two seven-cylinder board machines. One machine produces up to 110 tons per day of folding and non-folding boxboards for our own Carton Specialties Division at Leaside, Ontario as well as for many customers' carton plants located throughout the provinces of Quebec and Ontario. The second machine produces up to 185 tons per day of test linerboard. The production from this latter machine, combined with semichemical corrugating medium made in our Trenton Mill Division, is used for the manufacture of corrugated boxes in our own converting plants in Montreal, Peterborough, Toronto, Chatham, Winnipeg and Calgary and will also be used in the new converting plant now under construction at St. Marys, Ontario.

About 20 per cent of the fiber used in our operations is purchased as virgin pulp; bleached and unbleached sulphite and kraft pulps, bleached soda pulp and selected screenings. The remaining 80 per cent is purchased as waste paper from waste paper dealers or as scrap and cuttings from our own corrugating plants. The virgin pulp is used for furnishing topliner and underliner beaters together with high quality grades of waste papers. Waste papers are used almost exclusively for furnishing filler and bottom liner beaters. For boxboards, waste papers with low strength characteristics such as boxboard cuttings and news are used while for linerboard, where strength is of major importance, strong waste papers such as corrugated and kraft boxes and cuttings are preferred.

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Cleaning Problems

Different grades of waste papers create different cleaning problems in mill operations and a complete understanding of the stock cleaning problems on our two machines cannot be appreciated without a clear understanding of the difference between the boxboard cuttings and news, furnished to the filler system of the boxboard machine, and the kraft and corrugated boxes and cuttings furnished to the filler system of the linerboard machine. These are the major grades furnished and it should be understood that other grades, often lower in quality, are used from time to time.

By "news," we mean old newspapers and the principal contaminants here are old magazines, bits of cloth, carbon paper, colored tissue paper and the like. This grade is normally hand-fed to batch beaters and the trash is sorted out while the beater is being furnished.

Boxboard furnish consists of clean, dry cuttings from paperboard converting plants or other users of paperboard. The main contaminants found in this grade are gobs of wax, printing ink and floor sweepings from printing plants which inadvertently get into bales of this material during the converter's clean-up operations. Corrugated and kraft boxes and cuttings come from our own converting plants and are clean; rejected or used boxes, however, have joints closed with either cloth tape or stitching wire. Another big source of this grade is brewery plants.

Corrugated boxes containing empty bottles are returned to the brewery. It is the habit of the beer drinker and the tavern keeper to discard bottle caps and any broken bottles into the corrugated box in which the product is delivered. The corrugated boxes containing the empties and the debris eventually find their way back to the brewery where the empties are removed. The empty cartons, often complete with broken glass and bottle caps, in spite of continued efforts on the part of the brewery to have these removed, are baled and sent to the paper mill.

Some 25,000 pounds per week of trash is removed from our linerboard machine and about 5000 pounds per week from our boxboard machine. This trash amounts to about 1.5 per cent of the stock furnished to the linerboard filler system and about 0.5 per cent of the stock furnished to the boxboard filler system. The major portion of the trash is caught in the filler breaker-beater or Hydrapulper and is removed manually from the breaker beater during the week-end shut-down period or continuously by the Hydrapulper ragger and junk remover.

In the primary pulping equipment, however, some of the bottle caps and accompanying cork inserts, stitching wires, paper clips, etc. are broken into small particles. These fines, which include much broken glass, become finely divided like sand and pass through the beater and hydrapulper screen plates. For removing this type of material, we have found centrifugal cleaners to be ideally suited.

Trash Removal

In the days of the batch beater, the removal of trash from waste paper did

not present any major problem to the mill as the waste was hand sorted before being fed to the pulping system. However, with increased production demands and the advent of continuous filler systems, hand sorting became impractical and just about impossible, and rifflers or sand traps were therefore installed to remove fine trash in the early stages of stock preparation. Our linerboard machine came into production in 1929 and a riffler system was part of the original equipment installed. When production was at design capacity, this equipment did a good job in removing glass particles, etc. provided the stock consistency was kept below one per cent but, as production increased, riffler efficiency decreased since it was impossible to maintain production and keep the riffler stock consistency below one per cent.

It is well known that riffler systems take up considerable floor space and as our mill is located in a congested part of the City of Toronto, space is at a premium. Therefore, when centrifugal cleaners were introduced to the paper industry a few years ago, their usefulness in our operations was obvious and it was not long before we installed Vortraps in the linerboard filler system and centrifugal cleaners have now entirely replaced the riffler system. In 1950 a continuous filler system was put into operation on the boxboard machine and centrifugal cleaners were included as a part of the new equipment.

Shive Removal

For many years we were plagued with coarse particles pulling out of the topliner stock on one of the grades of bleached manilla made on our boxboard machine. This was an all-over dark-colored ink job printed with flat inks and for this reason it was impossible to use materials such as starch to cement these particles more firmly to the fibers. At the printing press the particles were pulled out of the sheet by the tack of the ink and found their way onto the printing plate. As each impression was made, individual particles appeared on the printed sheet as a dark spot surrounded by a white circle. These imperfections are known by the descriptive name "fish-eyes" in the printing trade. To get rid of "fish-eyes" the printer had to stop the press, and remove each particle from the plate. We were charged for the customer's loss and both we and the printer were unhappy about this condition. After repeated trials and investigations we satisfied ourselves that the fish-eyes were the result of shives and pitch in the unbleached sulphite we were furnishing. Since this was the best and cleanest unbleached sulphite we could obtain, we decided that centrifugal cleaners might overcome this difficulty. After considerable experimental and investigational work an installation was made and put into operation in the fall of 1955. Since this time, we have not had a single complaint from our customers about "fish-eyes."

Stock Flow Through Cleaning System

For a better understanding of our use of centrifugal cleaners, a description of stock flow through each of the systems where we have installed this type of cleaner may be helpful. Figure 1 shows our test linerboard filler-stock cleaning system.

Bales of waste paper, with wires removed, are manually fed into a 175-ton per day continuous breaker beater fitted with a ragger and a backfall with 11/16 inch perforations. Each week-end, when the beater is cleaned out, about 20,000 pounds of trash is removed, consisting of cloth tape, wet-strength paper, cellophane, foil, stitching wire, paper clips, pieces of glass or sand and bits of foil and cork. Stock from the breaker beater is pumped over Emerson magnetic separators, one of which is cleaned manually each shift and the accumulated metal removed. This metal amounts to about 200 pounds per week and is mostly stitching wires.

From the separators the stock passes through a No. 4 Shartle refiner, fitted with cast fillings and ⅝ inch bars, followed by a Jr. No. 4 Emerson jordan, also fitted with cast fillings and ½ inch bars and is pumped to the Vortrap chest. Some trash settling occurs here and on the week-end shutdown, 800 to

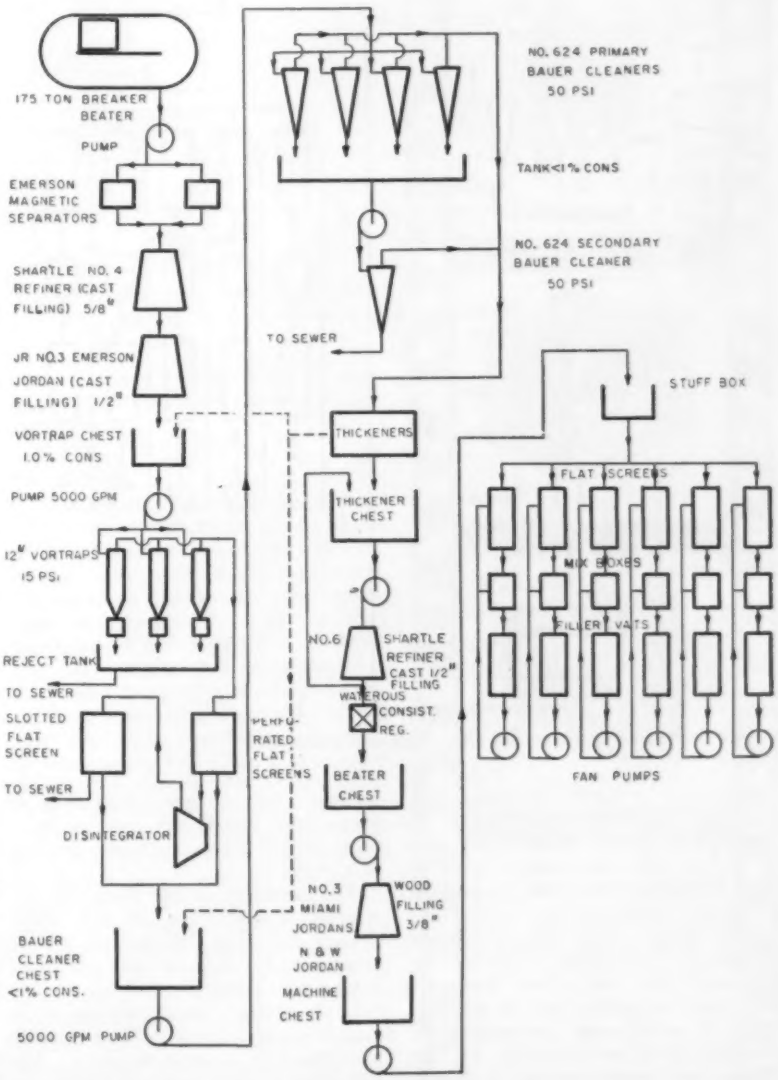


Figure 1—Test liner board filler cleaning system.

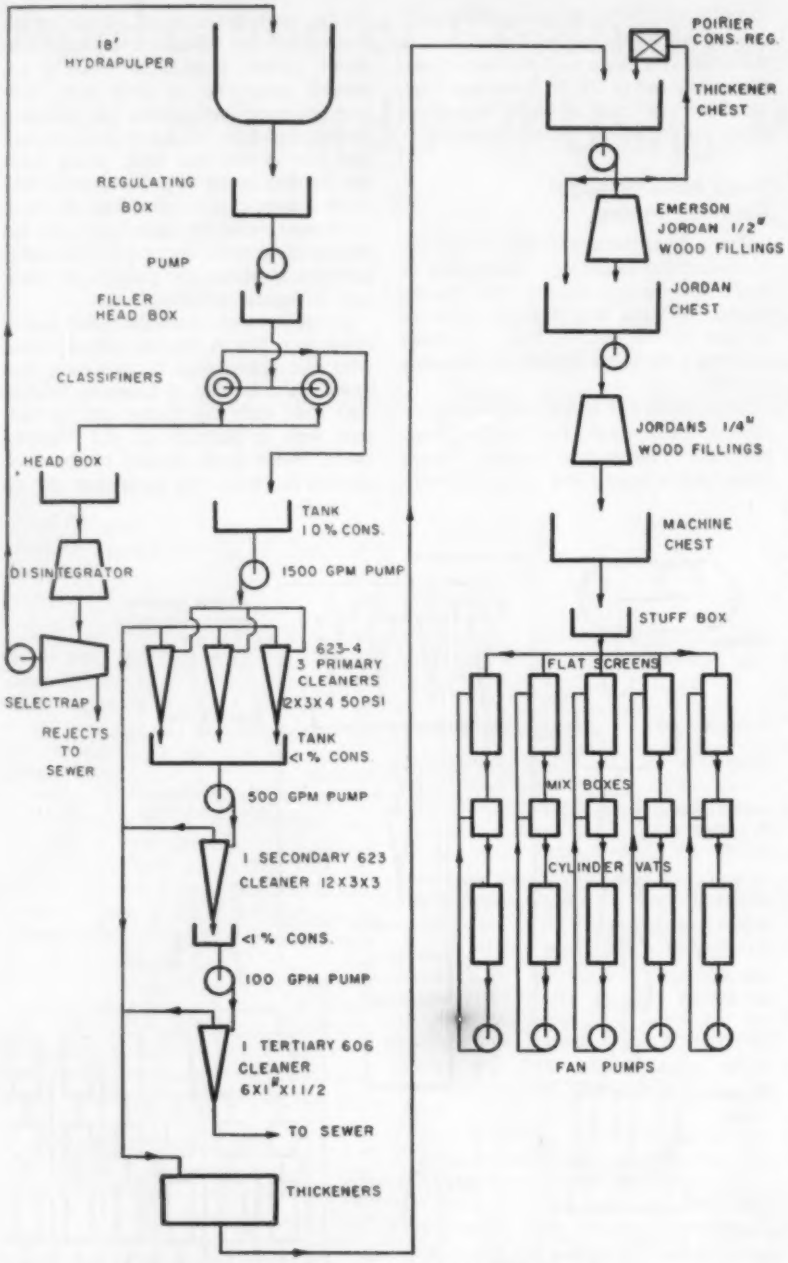


Figure 2—Cleaning system for filler stock on boxboard.

1000 pounds of bottle caps, paper clips, stitching wires, etc. are removed. A 5000 g.p.m. pump transfers the stock at one per cent consistency to three 12 inch Vortraps at an inlet pressure of 15 p.s.i.

The rejects from the cleaners, amounting to about 400 pounds per day of coarse glass and ground metal are disposed of as garbage and the accepted stock is passed over perforated flat screens. Materials rejected by the screens are passed through a Shartle disintegrator pump and over slotted screens. The tailings, amounting to about 200 pounds per day of cellophane, wood slivers, cork, etc. are sent to garbage.

The accepted stock from all the screens is discharged to the Bauer cleaner chest and delivered, at a consistency of less than one per cent, by a 5000 g.p.m. pump to a battery of four No. 624 primary Bauer cleaners at 50 p.s.i. Material rejected by these cleaners is pumped to a single secondary No. 624 Bauer cleaner and these rejects are flushed to the sewer. Rejects here are bits of fine glass, slivers of wood, metal foil and chips of stitching wire and amount to about 300 pounds per day. Most of this trash is large enough to be retained on a 60-mesh screen.

Stock accepted by the cleaners is thickened, refined through a No. 6 Shartle refiner with cast filling and ½ inch bars and the consistency regulated to 3.5 per cent consistency by a Waterous consistency regulator. The remainder of the system is conventional and consists of No. 3 Miami and Noble & Wood jordans, beater and machine chests, flat screens, mix boxes, vats and fan pumps.

Figure 2 shows our boxboard-machine cleaning system on filler stock. Bales of waste paper, with wire cut but not removed, are conveyor-fed to an 18 foot Hydrapulper with 5/16 inch perforated screen plates and equipped with ragger and junk remover. Materials rejected here amount to about 5000 pounds per week and consist of wire, string, wet-strength paper, cellophane, cloth, paper clips, etc.

Accepted stock from the pulper is passed through a regulator box and pumped to a headbox at a consistency of about 2.5 per cent; from this headbox the stock flows by gravity through two Shartle classifiers with ⅛ inch perforations. Rejects from the classifiers are refined in a Shartle disintegrator and enter a Shartle Selectrap screen where light materials such as cellophane, cork, wood slivers, etc. are rejected and sent to garbage while accepted stock is returned to the Hydrapulper.

Stock accepted by the Classifiners is diluted to a consistency of one per cent or less and is pumped to three primary 623-4 Bauer cleaners at 50 p.s.i.; the rejects are diluted to less than one per cent consistency and pumped to a secondary 623 Bauer cleaner and the rejects from this cleaner are in turn pumped at one per cent consistency to a 606 tertiary Bauer cleaner; material rejected here is flushed to the sewer. The rejects consist of flakes of printing ink, bits of foil, slivers of wood and finely ground glass, and miscellaneous dirt, amounting in all to about 300 pounds per day or 0.2 per cent of the stock cleaned.

All cleaners have cast iron bodies with vinyl linings and nylon reject orifices. Accepted stock from the cleaners is thickened, the consistency regulated to 3.5 per cent by a Poirier consistency regulator and the stock refined, jordaned and delivered to the machine vats in the conventional manner through flat screens, mix boxes, etc.

Figure 3 shows our boxboard machine cleaning system on topliner stock.

Stock is pulped in a Shartle Tugboart and is refined and jordaned in the usual manner as far as the machine stuff box. At this point the stock is diluted to a

consistency of about 0.8 per cent in a wood-stave tank and is delivered by a 1500 g.p.m. pump to a battery of 14 No. 606 primary Bauer cleaners. A 250 g.p.m. pump takes the cleaner rejects to two No. 606 secondary Bauer cleaners and these rejects are in turn pumped to the filler stock system at the stuff box. Accepted stock from each of the cleaners is pumped to a selectifier screen and thence to the liner vat and the vat fan pump discharges to the wood-stave tank ahead of the primary Bauer cleaners for stock dilution ahead of these cleaners.

Cleaning Efficiency

The question of the efficiency of centrifugal cleaners is one that is very difficult to answer and particularly so in a mill handling waste-paper stocks. In attempting to determine cleaner efficiency, it is necessary to know how much dirt is in the stock before and after cleaning. There is no problem in determining how much dirt is in stock after cleaning but when dealing with waste paper it is just about impossible to determine how much dirt it contains before cleaning, since the dirt content varies widely. However, from experience, we do have a pretty good idea of what each cleaning system does for us.

A very useful test for determining the efficiency of a stock-cleaning system on test linerboard is to hold a wetted, square-foot sample of the linerboard over a strong light. Light passing through holes in the sheet is readily seen and it may be assumed that each hole is the result of non-fibrous grit getting through the cleaning system and onto the paper machine. In passing through the calender rolls, the grit is pulverized and drops out, thus resulting in holes in the linerboard. With the perfect cleaning system, a sheet should show no grit holes. When filler stock cleaning was accomplished by means of a riffler or settling trough, we ran a 66 pounds per 1000 square foot sheet of test linerboard and the number of grit holes found in the sheet averaged 50 per square foot. With three 12-inch Vortraps installed, the number of holes dropped to about ten and today with the combination of Vortraps and Bauer cleaners installed and running a 46 pound per 1000 square foot sheet, the number of grit holes range from zero to five per square foot.

On the boxboard machine, before the installation of Bauer cleaners on the filler system, it was not uncommon to find the vats filled with non-fibrous grit to the lower level of the cylinder moulds at the end of a week's operation, and, on occasion, the grit rose to such a height as to abrade through the cylinder wire cloth. No such difficulties have been noted since the installation of

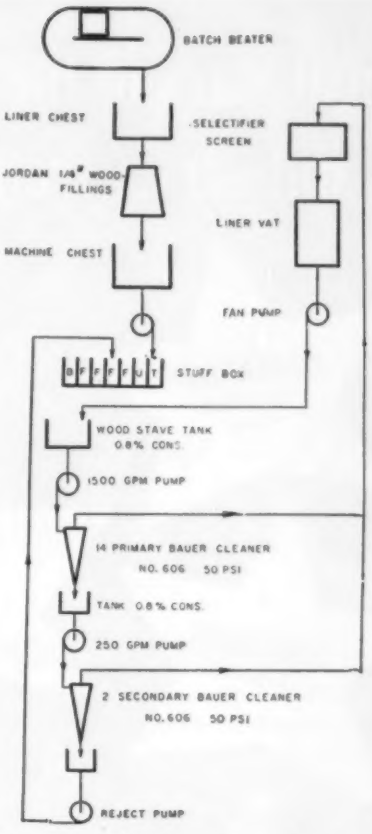
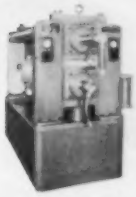


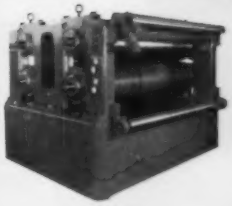
Figure 3—Cleaning system for top liner stock on the boxboard machine.

Bauer cleaners and little grit is now found in the vats at the end of a week's operation.

Conclusion

The efficiency of our Bauer cleaner installation on the topliner system of the boxboard machine is best described by stating: "We have had no customer complaints on fish-eyes since this equipment was installed." Using the Dirt Estimation Chart supplied by TAPPI and referred to in Testing Method No. 437, a numerical rating on the dirt present in our bleached manila board before and after installation of Bauer cleaners is possible. Class I dirt ranges from 0.05 to 0.1 sq. mm. in area; Class II, 0.2 to 0.5; Class III, 0.7 to 1.5 and Class IV, 2.0 to 5.0. Before the cleaners were installed dirt counts ran 28 specks of Class I and II dirt and four specks of Class III dirt; today with Bauer cleaners our board analyzes 14 specks or less of Class I and II dirt and zero specks of Class III dirt. A reduction in dirt count of 50 per cent of the fine dirt particles and complete elimination of all coarse dirt has been attained. This is accomplished with a stock loss of about one per cent of the top liner stock.

Dilts
EMBOSSERS

AIR HYDRAULIC

LIGHT DUTY

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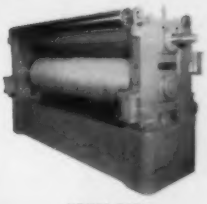
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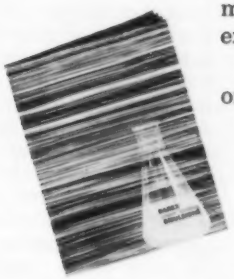

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How C-Z Gets Profits Out of Sulphite and Kraft Mill Liquors

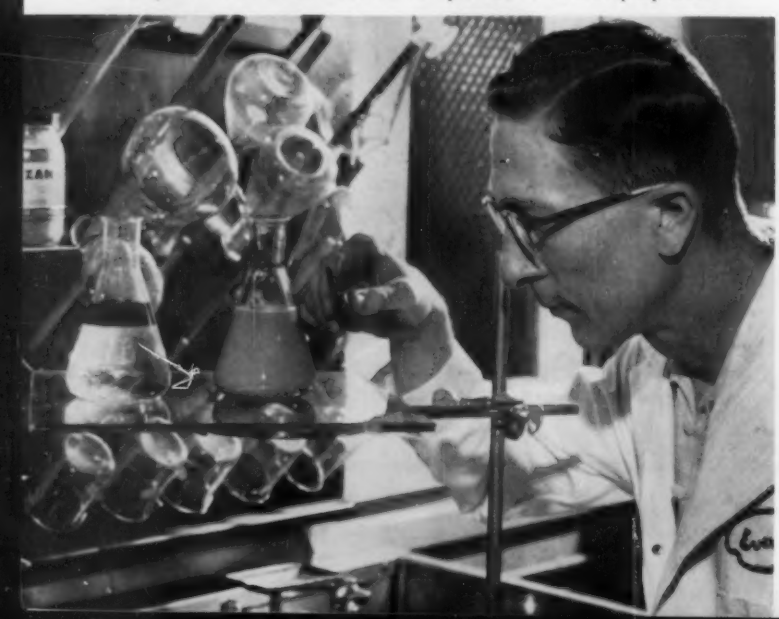
Paul D. Van Derveer
Associate Editor
Paper Trade Journal

For years the pulp and paper industry has been faced with the problem of how to utilize waste liquor produced in the pulping process. As a waste it has presented serious disposal problems and has led to the use of recovery processes to regain or retain valuable heat and chemicals. These recovery methods have been supplemented in recent years by the development of commercial processes for the production of a wide variety of marketable by-product chemicals from these waste liquors.

One of the companies working in this field of chemical waste utilization with a high degree of success is Crown Zellerbach which began waste utilization studies nearly ten years ago at their Central Research Department in Camas, Washington. The department was then under the overall direction of Dr. W. W. Moyer with Dr. W. M. Hearon heading up the by-product research program. The first child born of this program was Orzan A, a fine powder produced by concentrating and spray drying ammonium base waste sulphite liquors, which was introduced in 1952, as a binder, dispersant, emulsion stabilizer and a suspending agent. Other products in the Orzan family have since been developed as well as other chemicals from waste kraft liquor. The program has met with continuing success, and with chemical sales increasing and new products being introduced C-Z set up a new Chemical Products Division in July 1955 to give more emphasis to chemical product development. Dr. Hearon was named general manager.

With both laboratory and sales groups, the division is located at Camas in the research laboratories where it initiates new chemical products. The processes for making these are then developed in its pilot plants. Market development, sales and technical services are also handled by the Chemical Products Division. While manufacturing is the direct responsibility of the mill at which the products are made, the division oversees the operations and shipment of products. Thus, this Division has responsibility from beginning to end for the chemical products made from C-Z's waste materials.

Chemist at C-Z's Chemical Products Division headquarters makes an analysis of an Orzan solution for product research purposes.



Most by-product utilization efforts in the past have been directed at waste sulphite liquor rather than at kraft black liquor. The main reason is that recovery processes for kraft are considerably more advanced than sulphite recovery processes. Few sulphite mills have a recovery system that enables them to recycle or recover any great quantity of chemicals used in the pulping process. In spite of this fact that there is less pressure to utilize kraft waste liquors, C-Z has recently begun production of dimethyl sulphide from kraft black liquor. The process allows the recovery of this organic chemical without essentially interfering with the usual use of black liquor in the kraft process. It is said to open up new possibilities for additional values from kraft pulping.

Products from Sulphite Waste Liquor

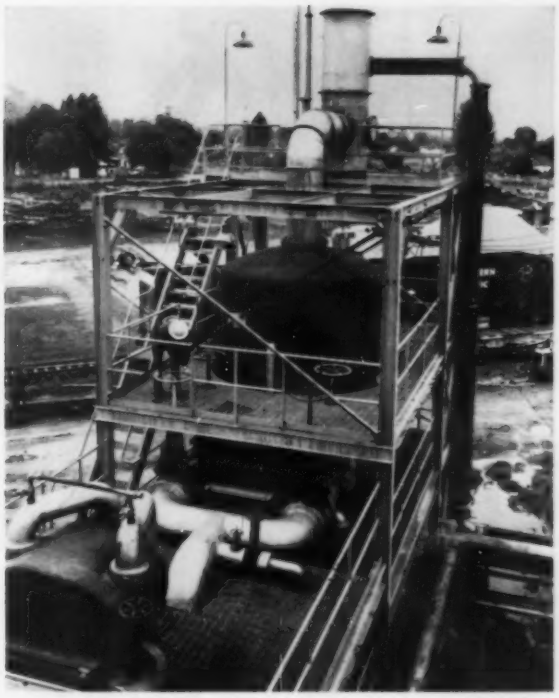
As mentioned above, Crown Zellerbach first moved into the silvichemical field with its Orzans. These are spent liquor solids, used primarily as industrial dispersants and binders, recovered at the ammonia base sulphite pulping mill in Lebanon, Oregon. Since the introduction of Orzan A in 1952 as a relative jack-of-all-trades in its field, the trend has been toward tailoring Orzan products for specific uses. Now, instead of one Orzan, there are seven, sold in powder form by the bag, or as liquids in drums or tank car amounts. These products are all derived from ammonia base sulphite waste liquor, but C-Z has not yet disclosed the manufacturing processes.

Orzan A is a free flowing spray-dried powder composed of a mixture of organic chemicals derived principally from the non-fibrous portions of wood. The two major classes of compounds present are ammonium lignin sulphonate and wood sugars. Solutions of Orzan A are slightly acidic.

Although the structure of the lignin

sulphonic acids is not known, evidence indicates they are repeating unit polymers of an average molecular weight of about 10,000. The repeating unit has the general structure of guaiacyl propane. The sulphonic acid group is known to be attached to an aliphatic carbon atom, probably adjacent to the benzene ring. It is also generally believed that one or more hydroxyl groups may appear on the three-carbon side chain.

Orzan A is also supplied as a water solution containing 50 per cent solids. In this case, designated as Orzan AL-50, it is shipped in tank cars or drums. Orzan S, another member of the family, is essentially spray-dried sodium lignin sulphonate. It contains wood sugars in lesser amount than Orzan A. It is also available in a 50 per cent solids solution designated as Orzan SL-50.



Operator at C-Z's chemical products plant adjusts flow of unit's evaporator.

Variety of Applications

Some of the major applications developed to date for these products are:

• As a stabilizer — Normally used with a primary emulsifier such as rosin soap, both Orzan A and Orzan S are excellent stabilizers for asphalt emulsions.

• As a binder—Orzan A and Orzan AL-50 may be used in amounts as low as one per cent to effectively bind coal fines into briquets of greater strength and cleaner ash than asphalt-bound briquets.

Orzan A is also advantageous in the production of foundry cores due to the fact that it is insoluble in water after baking. This means that the cores need not be used immediately after baking to avoid softening because of absorption of moisture from the air. Orzan also serves as a binder when sprinkled on dusty roads in dilute water solution.

• As a dispersant — Orzan A and Orzan S are effective, low cost dispersants for cleaning compounds, dyestuffs, carbon black, clay and lime slurries. In the manufacture of gypsum board, the dispersing ability of the Orzan reduces the amount of water needed to achieve proper viscosity thus allowing increased dryer capacity or lower dryer temperatures.

• As a sequestering agent — Many metal ions are sequestered by either Orzan. Most strongly sequestered are copper, iron, nickel, tin, zinc, and aluminum. In the sequestered state they no longer react as normal metallic ions. Thus alkaline solutions of iron or copper do not form insoluble hydroxides, phosphates, or carbonates in the presence of the Orzan.

• Other uses—Orzan A and Orzan S are also used in linoleum paste as an adhesive, in grinding operations as a grinding aid, in ceramics as a deflocculant and binder, in boiler water treatment as a dispersant and scale inhibitor, in polyvinyl adhesive as an extender, in phenolic resins as an ingredient and extender, and as an emulsifier. There are, as well, many agricultural possibilities for Orzan A. A number of potential applications have resulted from research at several western universities and by private industries. Orzan A may be used to improve soil structure, improve water penetration, add organic matter to the soil, and minimize wind erosion.

Other Orzan Products

A recently developed modification of Orzan A is a product designated as Orzan AH-3. The process is covered in a patent issued to Hearon, Lackey and Martin and assigned to Crown Zellerbach. It involves heating sulphite waste liquor, containing lignin sulphonic acids and wood sugars, together with a suitable nitrogen compound under carefully controlled conditions. The starting material may be derived from any of the conventional calcium-base, magnesium-base, sodium-base, or ammonium-base sulphite pulping operations. If the waste liquor is derived from the ammonium-base pulping process, its normal ammonium lignin sulphonate content suffices for the required nitrogen compound.

The chemical reactions occurring and the chemical products formed cannot be characterized precisely. However, during heating, the various constituents of the mixture appear to polymerize. Condensation reactions also occur. Accordingly, molecular structures of substantial magnitude are built up, accounting for an increase in viscosity of the mixture.

The polymerization involves the lignin but specifically requires the presence of sugar and the ammonium ion. Evidence of increased molecular weight is the increased viscosity of solutions of a given concentration compared to Orzan A. The average molecular weight of Orzan AH-3 is about 40,000 compared to about 10,000 for Orzan A. Dark brown in color, Orzan AH-3 is a free-flowing, non-hygroscopic powder soluble in water in all concentrations. It may be applied in any of the accepted uses for lignin sulphonates; however, because of its modified nature, it is superior for certain applications, for instance as a dispersant, as an ore flotation depressant, or as a ceramic binder.

Another product derived from Orzan A is Orzan P which has the special property of precipitating from dilute solutions by the addition of alum. The precipitated product clings to fibers or other materials present with it. In softboard production as little as two per cent would be mixed with the fiber suspension and precipitated by alum. It is said to result in greater transverse strength, improved stiffness and increased water resistance.

Three other members of the Orzan

Overall view of Lebanon, Oregon chemical products plant. The Orzan family of chemical additives are manufactured here from sulphite waste liquors obtained at the company's adjacent pulp mill.

family are Orzan LG, Greenz 26, and Tanz. The first of these is for use in the production of linoleum paste. It is specially designed to give maximum adhesiveness at the lowest cost to the paste manufacturer. Greenz 26, basically an agricultural spray, is perhaps the only lignin by-product now which the average householder could use himself. An iron complex product based on Orzan A, Greenz 26 is sprayed on plants so that the leaves can pick up iron and start producing chlorophyll, thus regaining a healthy green color. Tanz, an extender for vegetable tannin extracts, speeds penetration, improves color, and adds bulk to leather.

Simple Process Isolates Conidendrins

Yet another group of products is obtained from waste sulphite liquors by Crown Zellerbach. They are the conidendrols and conidendrins which C-Z has recently made available on a developmental scale. Alpha conidendrin has been known for many years as a minor constituent of several coniferous trees, but has not been commercially available. The substance can be isolated from waste sulphite liquors during the pulping process even though it occurs as only a small percentage of the original tree.

One process, developed by C-Z's Research Department, for isolating conidendrin consists of simply adding an organic precipitant to the cooled and filtered spent sulphite liquor, and stirring. After the mixture settles for a short time, the conidendrin, which separates at the bottom of the container, is easily collected by filtration. The attractive features of this process are that process equipment may be of extremely simple design, and that in about one hour 90 per cent of the conidendrin isolable by eight hours of extraction in conventional equipment can be recovered.

The conidendrols are derived from conidendrin and differ structurally from conidendrin in that the methoxyl groups present in the latter have been converted to phenolic groups.

Alpha conidendrin is a white, crystalline solid with a melting point of 255-256° C. and is practically insoluble in water. It contains four potentially reactive groups in the molecule, and is optically active, containing three asymmetric centers. It might be expected to find use as a raw material for the manufacture of fine chemicals and pharmaceuticals, as an antioxidant, or it may be of value in the dye industry.

Two of the compounds derived from alpha conidendrin are alpha and beta conidentrol. Strongly phenolic in nature, these products are powerful reducing agents and have also shown strong antioxidant properties. The two conidendrol compounds are tetrahydric phenols containing a lactone ring and are derived from conidendrin by demethylation. They should be of particular interest for biological preparations because of their complex nature, optical activity, and derivation from a naturally-occurring substance.

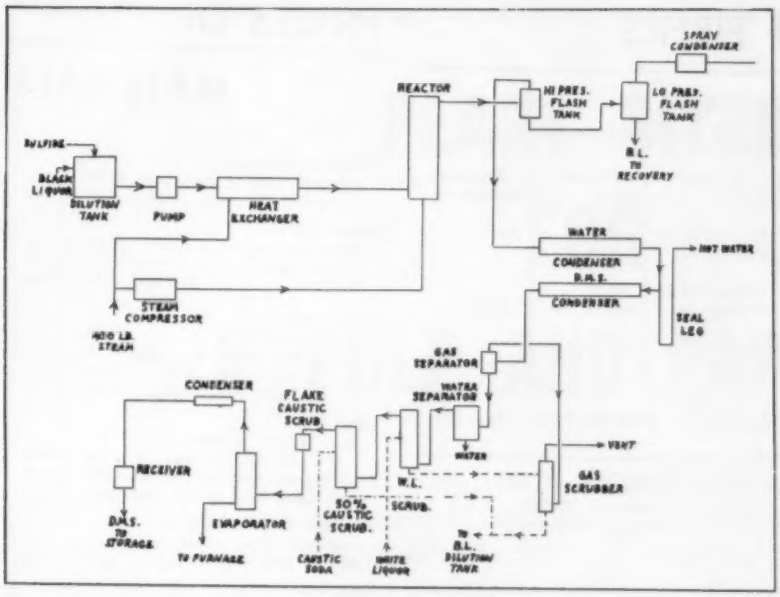
Thus we see that Crown Zellerbach is gaining a foothold in the field of chemical products through increased utilization of sulphite waste liquors. The astounding variety of products means not only economic gain for the company, but also a reduced waste disposal problem.

Products from Kraft Black Liquor

Most of the Orzans have competitors manufactured by other firms. Not so with another chemical from lignin: Dimethyl sulphide made from spent kraft digester liquor is based on a Swedish process for which C-Z has exclusive U.S. and Canadian rights. After considerable laboratory work on a miniature scale, dimethyl sulphide reached the pilot plant stage at Camas in May, 1957. The pilot plant has now been converted to a production unit and carload shipments are being made from it.

Dimethyl sulphide in its pure form is a clear liquid with a sharp, unpleasant odor, a characteristic which makes it valuable as an ingredient in odorants for manufactured and natural gas to detect leaks.

Other uses for DMS are as sulphur carriers in agricultural and rubber chemicals and as a base for certain solvents. Production at Camas, and later at other plants, has made dimethyl sulphide available to the organic chemical industry in the general raw materials price range. In addition, C-Z eventually expects to use it to manufacture other



Flow diagram for dimethyl sulphide pilot plant. A side stream of black liquor from the nearby kraft mill evaporators supplies the plant.

chemicals. Previously, it had been a high-priced specialty chemical.

Crown's process is based on a recent development by Hägglund and Enkvist, two Swedish scientists, who found that, by adding sodium sulphide to kraft black liquor and heating it to 300° C. for several hours, the amounts of methyl mercaptan and dimethyl sulphide were greatly increased over the amount usually produced in a kraft cook.

Here's how C-Z has adapted the process to operate on a continuous basis: Kraft black liquor of about 50 per cent solids from the vertical evaporators at 200° F. is pumped to a mixing tank, and sulphur compounds, such as elemental sulphur, are added about equivalent to the sulphur later to be removed as dimethyl sulphide. The mixture is heated by a heat exchanger to about 380° F. and finally by sparged steam to 450° F. This temperature is maintained until the reaction is complete by retention in a reactor tank. The tank is relieved to a flash tank, and the volatile dimethyl sulphide with water and a little methyl mercaptan is bled off through condensers. The black liquor is returned to the kraft mill for further evaporation and burning. The condensate is run to a separator tank, where the upper phase containing dimethyl sulphide is removed. This crude dimethyl sulphide is about 85 per cent pure and contains about 10 per cent methyl mercaptan and 5 per cent high boiling polysulphides. The product is purified by scrubbing with dilute caustic, drying with 50 per cent caustic, and finally distilling. The yields run about 3 per cent crude or 2.6 per cent pure, based on the black liquor solids, or 60 pounds pure per ton of pulp.

Plant Erected Near Kraft Mill

A plant based on the modified process was erected near the kraft mill facilities at Camas. A side stream of black liquor from the multiple effect evaporators supplies the plant which is designed to produce nearly two million pounds per year of dimethyl sulphide.

One change in the usual kraft recovery cycle caused by the new operation is that less heat is recovered from the furnace, since a small amount of organic matter has been removed, and a little more outside fuel must be introduced. Although there is some heat loss, Crown feels that the process is economically justifiable, and in fact expects that the favorable cost and production potential offered by kraft black liquor will open up new markets for dimethyl sulphide.

Other chemical products based on dimethyl sulphide and now being marketed by Crown Zellerbach are dimethyl sulphone and dimethyl disulphide. Solvent properties of these products are of great interest, with numerous possible applications.

Other Chemical Products

Another Crown Zellerbach chemical product is thujaplicin, a naturally occurring chemical isolated from western red cedar. This is a seven membered monocyclic compound offered as a mixture of the alpha, beta and gamma isomers with the gamma form predominating. Thujaplicin is an oily liquid with a molecular weght of 164.2 and boiling range of 140-150° C. It is of interest as a chelating agent, as a fungicide, and as an intermediate for the manufacture of specialty dyes and chemicals. Thujic acid also occurs in western red cedar and could be made available from the process used to isolate thujaplicin. Its projected use would be as a chemical intermediate.

Dimethyl sulphide plant. It can produce nearly two million pounds per year of product.

PRICES OF FIBERS

MARKET WOOD PULP

THIRD QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$82.50/ 90.00	$82.50/ 90.00	‡$90.00/ —	‡$90.00/ —	‡$90.00/ —
Bleached Gw'd	$97.50/100.00	$97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	$157.00/162.50*		$157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		$137.00/ —		
Kraft, Semi-bleached	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd.	135.00/ —	135.00/ —	†135.00/ —	*130.00/ —	
Sulphite, Unb'l. Gl'sn		134.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

‡ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances

NEW YORK RAG MARKET

PRICES NOMINAL

New Domestic Cotton Cuttings

Delivered Mill Basis

	Per 100 lbs.
No. 1 White Shirts	$13.50/$14.50
No. 1 Unblchd. Muslins	16.00/ 17.00
Blchd. & Unblchd. Underwears	15.00/ 16.00
No. 1 Light Cream Silesias	12.00/ 13.00
No. 1 Light Blue Overalls	7.00/ 8.00
Percales	6.00/ 6.50
No. 1 Light Prints	5.00/ 5.50
Suntan Khakis	5.75/ 6.75
Cottonades	3.00/ 3.50
No. 1 Washables	2.50/ 3.25

Old Domestic Cotton Rags

Delivered Mill Basis

	Per 100 lbs.
Mixed White	$3.25/$3.75
Cotton Pants & Overalls	2.25/ 2.75
Twos and Blues, Repacked	2.00/ 2.50
No. 2 Roofing	.60/ .75

COTTON LINTERS

Memphis Market

f.o.b. Oilmills

Week Ended Sept. 5		Per 100 lbs.
Grade 1	n. a.	
2		
3		$8.50/ $7.25
4		6.75/ 6.25
5	1 cut—felting	5.75/ 5.25
6		4.75/ 4.25
7		4.00/ 3.50

* Based on 73% cellulose.

OLD ROPE & BAGGING

(Prices to Dealers, f.o.b. N.Y.)

	Per 100 lbs.
New Burlap Cuts	$4.50/$5.50
Scrap Burlap	3.50/ 4.25
Australian Wool Pouches	5.00/ 5.50
Gunny	4.50/ 5.00
No. 1 Domestic Manila Rope	6.25/ 7.50
No. 1 Foreign Manila Rope	5.25/ 6.25
Domestic Sisal Strings	4.00/ 4.50

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Sept. 8	Sept. 8	Sept. 8	Sept. 8
No. 1 Mixed Paper	$12.00/ 13.00	8.00/ 10.00	7.00/ —	14.00/ —
No. 1 News	18.00/ 19.00	14.00/ —	16.00/ —	15.00/ —
Overissue News (Lg. size)	15.00/ 18.00	12.00/ 14.00	21.00/ —	19.00/ —
Mill Wrappers	13.00/ 15.00	10.00/ 12.00	10.00/ —	14.00/ —
Old Corrugated Containers	26.00/ 27.00	25.50/ 26.00	25.00/ —	25.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	35.00/ 40.00	40.00/ —	45.00/ —
New Double Kr. Ld. Corr. Cuts (Semi-chem. medium)	37.50/ 40.00	40.00/ —	42.50/ —	30.00/ 35.00
New 100% Kraft Corr. Cuts	45.00/ 50.00	45.00/ 50.00	45.00/ 50.00	35.00/
New Br. Kraft, Env. Cuts	50.00/ 55.00	50.00/ 55.00	57.50/ —	45.00/ —
New Br. Kr. Bag Waste Prntd.	65.00/ 70.00	70.00/ 75.00	52.50/ —	50.00/ 55.00
New Br. Kr. Bag Waste Unprintd	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ 60.00
	60.00/ 65.00	65.00/ 75.00	62.50/ —	55.00/ 60.00
No. 1 Groundwood Shvs.	25.00/ 30.00	20.00/ 25.00	18.00/ —	30.00/ 35.00
White Newsblanks	50.00/ 55.00	45.00/ 50.00	35.00/ —	55.00/ —
No. 1 Soft White Shvs.	55.00/ 60.00	60.00/ 65.00	55.00/ —	— / —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	65.00/ —	— / —
Hd. White Shvs.	90.00/ 95.00	95.00/105.00	85.00/ —	85.00/ 90.00
Hd. White Env. Cuts	105.00/110.00	110.00/115.00	90.00/ —	100.00/110.00
Col. Tab. Cards	50.00/ 55.00	55.00/ 60.00	52.50/ —	27.50/ —
Manila Tab. Cards	75.00/ 80.00	72.50/ 80.00	70.00/ —	65.00/ —
No. 1 Col. Ledger	30.00/ 32.50	30.00/ 35.00	40.00/	22.00/ —
White Ledger	52.50/ 57.50	50.00/ 55.00	55.00/ —	50.00/ —
Mixed Book & Mag.†	18.00/ 20.00	15.00/ 18.00	12.00/ -	— / —
No. 1 Books‡	22.00/ 25.00	20.00/ 22.00	27.50/ —	— / —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

PRICES OF MATERIALS

Aluminum sulphate:
grd. coml. bulk, c.l. wks. ..cwt. $2.00 / —
grd. iron-free, c.l. wks. ...cwt. 3.55 / —

Casein, acid prec.:
dom. ah. pt. c.l., (30 mesh) cwt. 56.00 / —
Arg. ex dock .....cwt. 19.00 /19.50
New Zealand .....cwt. 24.00 /25.00

Caustic soda:
c.l. wks. solid, 76% .....cwt. 4.80 / —
flak. & grd. drums, c.l....cwt. 5.20 / —
liquid 50% tanks.... 2.90 / —
liquid 73% tanks.... 3.80 / —

China Clay
dom., dry-grd., airfloat:
325 mesh bgs., c.l. Geo. ton 10.00 /12.00
300 mesh, bgs., c.l. Geo. ton 13.50 /14.50
imp., white, lump, c.l. ex. dock 20.00 /35.00

Chlorine:
single-unit tanks, works ..cwt. 3.15 / —
multiple unit, 2-5 cars per yr. 5.75 / 4.05

Lime:
hydrated, bulk, c.l. works ..ton 17.25 / —
quicklime, bulk, c.l. works ton 14.25 / —

Gum rosin:
K, M, N, drums, c.l. Savan, cwt. 7.75 / 7.90

Rosin size:
70%, gum & pale paste, tank cars, south, sh. pt. .....cwt. 7.51 / —

Saltcake:
dom. bulk, 100% anh. wks. ton 28.00 / —

Soda ash:
light, 58% ash bags, wks. cwt. 1.85 / —
bulk, c.l. wks. ..... cwt. 1.55 / —

Sodium chlorate:
drums, c.l., wks. ..... cwt. 9.00 / —
drums, l.c.l., wks. ..... cwt. 9.50 /10.50

Sodium peroxide:
dms., c.l. E. of Miss. .....lb. .20½/ —
l.c.l. (same basis) ..... .21 / .21½

Sodium silicate, 40° Be.:
tank-cars, wks. .....cwt. 1.20 / —
drums, c.l. wks. .....cwt. 1.55 / —
47° Be. WW.
tank-cars, c.l. wks. .....cwt. 1.90 / —
drums, c.l. wks. .....cwt. 2.25 / —

Soybean, protein:
chem. isol., wks. c.l. bags ..lb. .19 / .23

Starches:
Corn, multiwalls, c.l. prod. plant:
pearl .....cwt. 6.49 / 6.75
white, dextrins .....cwt. 8.08 / 8.20
chlorinated .....cwt. 8.25 / 8.35
potato, Idaho, c.l. wks. cwt. 6.35 / —
East, fr. all. 50 cents cwt.
potato, Maine, c.l. wks. cwt. 6.50 / —

Sulphuric acid:
60° Be. cbys. c.l. wks. ....cwt. 2.00 / —
l.c.l. wks. .....cwt. 2.30 / —
tank-cars, wks. .....ton 18.60 / —

Sulphur:
crude, c.l. mines, contract, long ton 23.50 / —
f.o.b. vessels Gulf dock..ton 25.00 / —

Sulphur dioxide:
liquid, coml. cyl., wks. ...lb. .10 / .12
multi-unit cars, wks. .....lb. .0535/ —

Talc, fibrous grd., bags:
c.l. wks., N.Y. .....ton 28.00 / —
l.c.l. wks., N.Y. .....ton 31.00 /36.00

Titanium dioxide:
anatase, c.l. dlvd. E. bags..lb. .25½/ —
l.c.l. dlvd. .....lb. .26½/ —
rutile, c.l. dlvd. .....lb. .27½/ —
l.c.l. dlvd. .....lb. .28½/ —

PLANT SITES FOR PULP AND PAPER

There are many fine sites remaining for pulp and paper mills in the Seaboard Southeast where the industry has made such outstanding growth in recent years.

Furthermore, the timber resources of the region are such as to give assurance of adequate supplies of wood for the prospective increased demands of the future.

We are prepared to furnish details on excellent sites possessing an abundance of fresh water, outlets for disposal of effluent and favorable foundation conditions.

When you are in the market for a pulp and paper location, converter plant or distribution facility, why not take advantage of the free services of an organization which has specialized successfully in pulp and paper locations for more than thirty years?

Address: **Warren T. White**
Assistant Vice President
Seaboard Air Line Railroad Company
3600 West Broad Street
Richmond, Virginia

New Glass "Papermaker" Fibers

PRODUCE DIMENSIONAL STABILITY

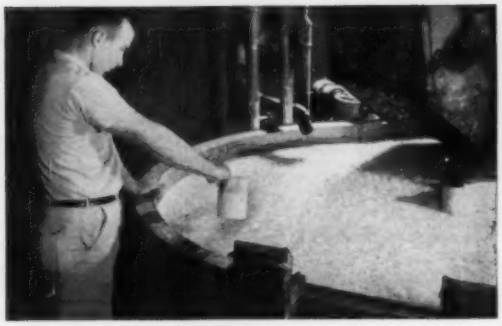
Glass Fibers form a rigid matrix—stabilizing the effect of moisture in cellulose sheets.

Because of their small diameter—8 to 150 times finer than a human hair—glass MICRO-FIBERS:

- Readily disperse in beater.
- Permit faster draining—faster drying.
- Do not impair printability of finished paper.
- Cause no skin irritation.

Investigate the economics of using glass "papermaker" fibers in combination with other fibers. Consider the new products you would be able to produce.

Available in five diameters (average) ranging from 3.5 to 2 microns.



Using conventional papermaking equipment and processes, a small percentage of glass MICRO-FIBERS contributes to dimensional stability in cellulose papers—during manufacturing *and* in the finished product.

PROPERTIES:

Dimensionally Stable . . .
Micro-Fibers will not stretch or swell.

Moisture Resistant . . .
Micro-Fibers retain high strength when wet.

Inorganic and Inert . . .
Micro-Fibers resist most corrosive fluids.

Economical . . .
Micro-Fibers are ready to use.

For more information about glass "papermaker" Micro-Fibers write to L•O•F Glass Fibers Co., Dept. 55-98, 1810 Madison Avenue, Toledo 1, Ohio.

L·O·F GLASS FIBERS

L·O·F GLASS FIBERS COMPANY

TOLEDO 1, OHIO

Stock Cleaner Maintenance Problems Bothering You?

NICHOLS FREEMAN®

..Try VORJECT Cleaner

Only **the Nichols Freeman VORJECT can handle these rejects day after day after day — with minimum maintenance. An unlined stainless steel VORJECT has handled rejects from bottom liner stock such as these for more than 28 *months*, with no maintenance required.**

NICHOLS ENGINEERING & RESEARCH CORP.

70 Pine Street, New York 5, N. Y.

405 Montgomery St., San Francisco 4, Calif.

1477 Sherbrooke St. W., Montreal 25, Canada

Representatives:

Douglas Robbins & Co., Lockport, Ill.

Harold E. Ingalls, N. Windham, Maine

A. H. Lundberg, Inc., Mercer Island, Washington

St. Regis Adds Chip Storage System in Expanded Purchased Chip Program

St. Regis Paper Co. has been among the pioneers in the use of chips from sawmills for paper making. In cooperation with sawmills, new methods were developed for debarking logs before they were sawed, and then reducing the slabs and edgings to chips suitable for the St. Regis mills.

In addition the company has recently sponsored the installation of concentration yards where slabs and edgings themselves can be debarked and chipped.

Pensacola Mill

The St. Regis mill at Pensacola, Fla., now receives a substantial portion of its chips by rail in hopper-bottom cars, and Link-Belt Co. has installed an extensive chip handling system to provide for the unloading, conveying and storage of these chips.

The St. Regis "Kraft Center," as it is called, at Pensacola includes woodlands, kraft pulp, paper and multiwall bag manufacturing. It is one of the largest such operations in the South and in the world.

In a normal day the four papermaking machines turn out more than 750 tons of kraft paper and paperboard.

A major portion of the paper is converted by St. Regis in an integrated bag plant with a capacity of 1¼ million multiwall bags a day. These bags become shipping containers for scores of commodities—cement, fertilizer, chemicals, feedstuffs and other products.

Furnishing the pulp to the paper machines are two pulp mills which handle the equivalent of 1,300 cords of pulpwood daily.

Use of Hardwoods

Because of the purchased chip program, the St. Regis plant has begun to use pulp from hardwoods in addition to the southern pine for which it was originally designed. This has required the building of two large storage silos to supplement the storage bins above the digesters. Hardwood chips can be stored separately in case the digesters are processing softwood chips or vice versa.

Equipment Used

The new Link-Belt chip handling system includes a car shaker for unloading railroad cars, a track hopper, drag chain feeders beneath the hopper, conveying and elevating equipment to the new silos, and feeders and conveyors from the silos to the storage bins above the digesters.

The chip handling system also includes new belt conveyors from the chippers in the wood room to the new chip silos. The arrangement of conveyors and elevators permits chips from the chipper to be delivered either directly to the bins above the digesters or to the new storage silos, and chips received by railroad cars to be transported to the storage silos or directly to the digester bins.

Each of the silos holds 260 cords (or 58,000 cubic feet) of chips. The silos are about 68 feet high and are 36 feet in diameter, except for the cone-shaped portion of the base.

The capacity of the conveyor system from the track hopper is 24,000 cubic feet an hour and from the chippers is 48,000 cubic feet an hour. Thus it is possible to fill a silo in just 48 minutes if both systems are employed simultaneously.

The chip handling system has been designed for the addition of four more silos, two on each side of the present ones. The shuttle belt conveyors over the silos can be extended to serve these additional silos, and so can the collecting belt conveyors at the base of the silos.

Delivery of Chips

Chips are purchased from sawmills within a radius of 150 miles from the Pensacola mills. They are carried to the mill in special highwall hopper-bottom cars with sides built up with steel to about 10 feet. Each car has a capacity

of about 3,200 cubic feet of chips. With the aid of the Link-Belt car shaker, six cars can be unloaded in an hour.

At the base of the track hopper, three banks of H-class drag chain conveyors, about 30 feet long and covering a total width of about 17 feet, draw the chips from the hopper and discharge them onto a 42-inch wide belt conveyor which delivers either to the bucket elevator serving the new chip silos or to the first of the belt conveyors leading to the digester building.

The centrifugal discharge bucket elevator is one of the biggest of its kind, handling 24,000 cubic feet of chips an hour. It discharges onto a 36-inch wide reversible shuttle belt conveyor which delivers the chips to either silo. The shuttle belt conveyor travels along rails, permitting discharge over the end of the belt at the desired location. Since the belt is reversible, it can thus feed chips to either silo.

Woodroom Chips

Chips from the chipper in the wood room are carried by a long, inclined belt conveyor, with 45-degree idler rolls for greater volume, to a second reversible shuttle belt conveyor, 48 inches wide, parallel to the first.

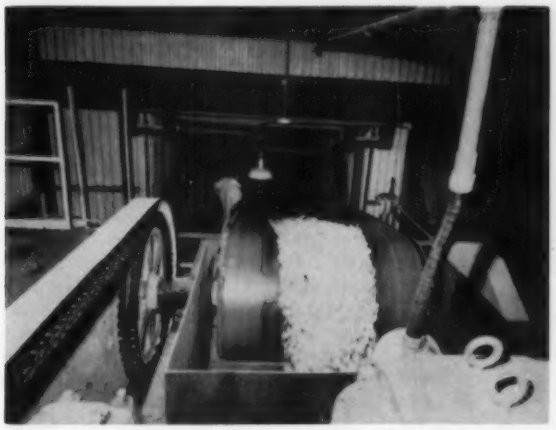
Chip Removal

The chips are withdrawn from the silos as needed by two Link-Belt rotary table feeders, each 17 feet in diameter. These feeders, used extensively throughout the pulp and paper industry for handling wood chips, consist of a power-driven circular plate which rotates below the bin opening. An adjustable feed collar, located immediately above the rotating table, determines the volume of material delivered. Equal quantities of chips flow under the collar around the complete circle and spread over the table as it revolves. The chips are then plowed off in a steady stream onto the belt conveyor.

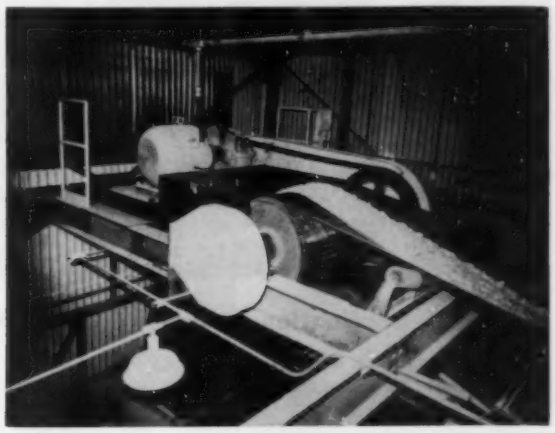
Because of the relatively large table diameter, bin openings which are large in proportion to the bin diameter act to reduce arching of the chips without withdrawing too large a quantity.

Delivery to Digesters

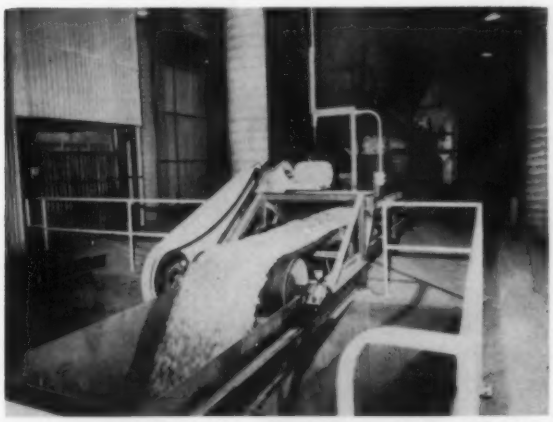
The two rotary table feeders discharge onto two 36-inch wide belt conveyors which deliver at right angles onto a single belt conveyor. Three successive belt conveyors then carry the chips to the top of the digester building, discharging them onto a shuttle belt conveyor which distributes the chips to the digester chip bins over the digesters.



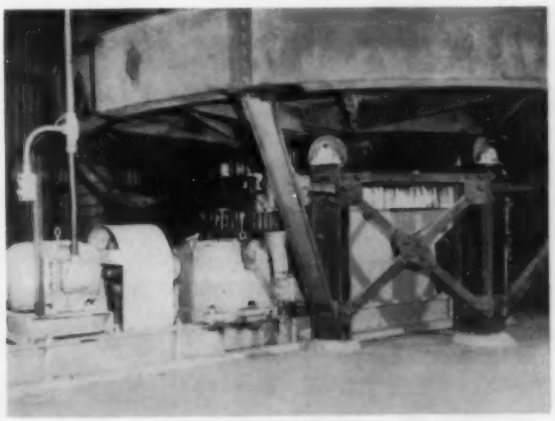
This load of chips is just a dribble for the 48-inch wide belt conveyor with 45-degree idlers which carries chips up the long incline from wood room to top of storage silos. Capacity is 48,000 cu. ft. of chips an hour.



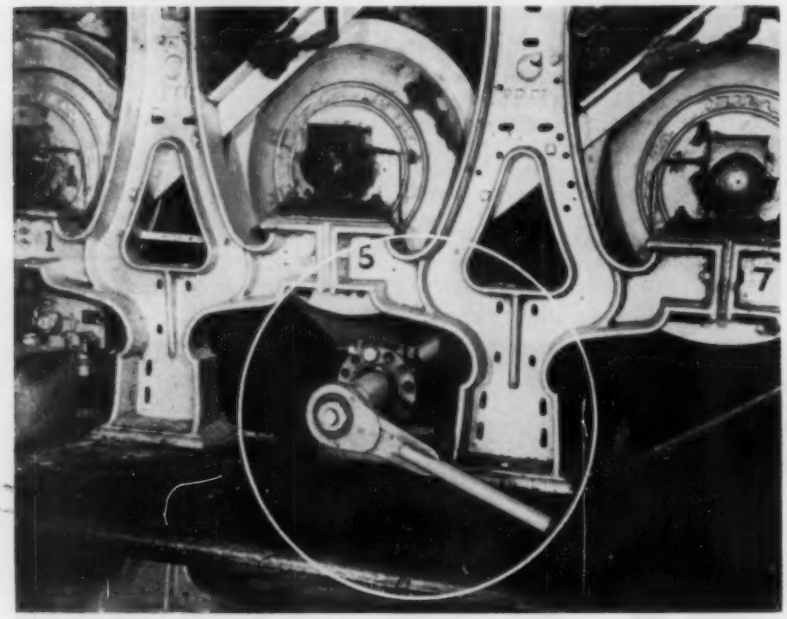
Head end of long, inclined 48-inch wide belt conveyor. Drive includes 75-h.p. motor, SG geared flexible coupling, parallel shaft speed reducer, RC roller chain and sprockets. The belt is supported on 45-degree idlers.



Chips are withdrawn from silos by rotary plate feeders, which discharge onto a belt conveyor system. Drive for conveyor above includes a 7½-h.p. Motogear and RC steel roller chain and sprockets.



The drive for each rotary table feeder includes a 25-h.p. motor, fluid coupling and worm gear reducer with vertical output shaft. Trunnions are supported by Link-Belt self-aligning roller bearing pillow blocks.



New Roll Application Provides Wider Web in Dryers

Stretching the sheet during drying operations with a Vari-Bow roll is reported to make possible substantial increases in web width with no increase in manufacturing costs. The roll, made by Mount Hope Machinery Co., Taunton, Mass., is mounted within or in front of the dryer section of a paper or board machine to provide a wide, workable web. The roll has in some cases increased sheet width more than one per cent. A typical installation is illustrated.

Checks, Calibrates Amplifiers & Controllers

A new type of portable instrument, known as the 'Taylortest I,' is made available for checking, installing or servicing the Taylor 'Transet' potentiometer transmitters and allied equipment. The instrument is a combined precision signal source, full potentiometer, and milliammeter. It is useful for calibrating all forms of amplifiers or servomechanisms which convert small signal voltages (millivolts) into proportional electrical currents (milliamperes) for control or transmission use. The instrument, being completely self-contained, provides all facilities, accuracy, and convenience requisite to testing in the field or laboratory.

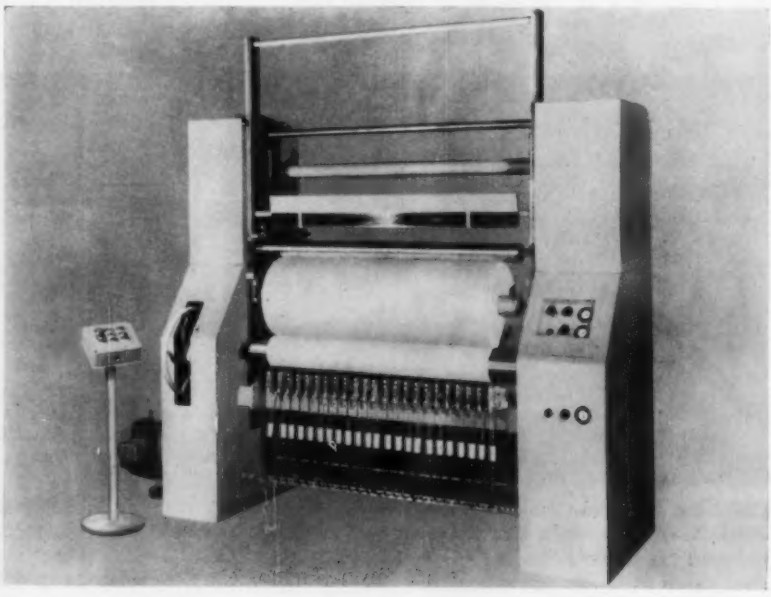
Details on the equipment may be obtained from the Taylor Instrument Co., Rochester, N. Y.

Slitter & Surface Rewinder

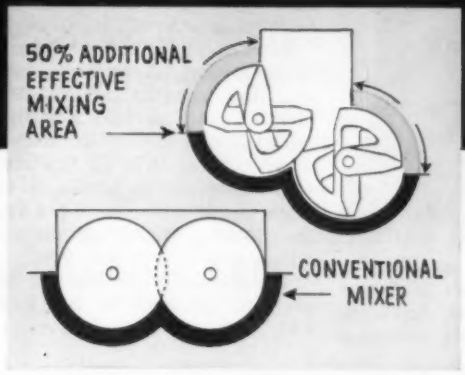
John Dusenbery Co., Inc., Verona, N. J., is building a new two-drum slitter and surface rewinder with top riding roll. Called the Model 840, the equipment is a general purpose slitter for most converting jobs and is available to accomplish shear and/or score cut slitting at speeds up to 2,000 feet per minute.

The Model 840 was designed for simple operation, easy threading and quick knife set-ups, for rewinding with or without cores. It produces rolls with controlled hardness. The model can be supplied with a Templet Manifold for two minute change-over of slit widths on score cut slitting.

Minimum slit width is half an inch with a single knife set-up. Machine widths through 82 inches are available to make rewind rolls from ⅜ to 36 inches diameter.



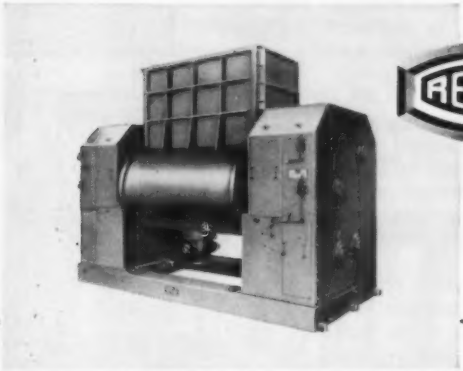
take this unique design... PRESTO! a much faster mix!



Get complete dispersion of pigments in shorter cycles at less cost with Readco's unique split-level bowl

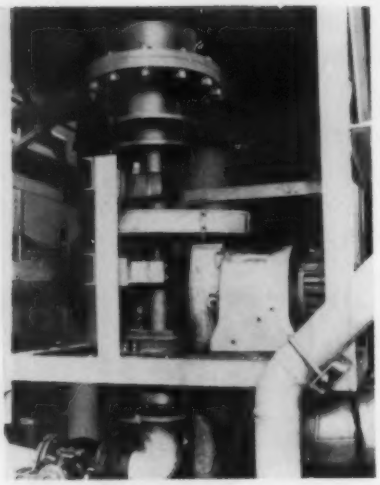
The special design of this Readco mixing bowl provides a 50% greater effective mixing area. Overlapping sigma arms operate at minimum clearance from the shell, prevent build-up of materials, speed dispersion. The design also permits maximum heat transfer from the jacket.

With Readco's Split-Level Mixer for high density coatings, you'll get complete dispersion, consistent mixing in substantially shorter cycles. Working capacities range from 150 to 900 gallons. Write for complete information.



Whatever the mixing job: a READCO mixer!

READ STANDARD
York, Pennsylvania
A Division of
Capitol Products Corporation



High Density Stock Tank Unloader

Manufactured and sold by Tidland Machine Co., Camas, Wash., a new device will unload high density stock tanks at a continuing and even density of 4.5 per cent, or at whatever density the operation calls for, controlled within 2 tenths of one per cent. This performance is obtained with a hand controlled valve. However, if desired, a D. P. cell may be installed as a safety factor for elimination of the human element in the control of the unloading unit.

The unit operates through the use of a rotating head with integral shrouded nozzles which operate by slicing and mixing the stock from the bottom of the tower. Speed of rotating head, size of nozzles, and the amount of water pressure determine the rate and density of discharge to the low density agitator chest.

Advantages to mill operators of this equipment include increased storage capacity (by converting low density tanks to high density tanks), and reduced operating costs (propeller agitators are eliminated, and no piping or other type of equipment is required around the periphery of the tower). Maximum horsepower on any unit is 1 h.p. Installation requires a space 2 by 3 by 4 feet under the tank.

8-Inch Saran Lined Pipe

Standard eight-inch saran lined pipe, designed to handle larger volumes of corrosive liquids and gases, has been added to Dow Chemical Co.'s complete group of piping products. Previously, the largest diameter of pipe offered was six inches.

Nine sizes of pipe, valves, and fittings from one-inch through eight-inch diameter are now available. Pipe is supplied with threaded ends in maximum lengths of 10 feet. Saran lined piping can easily be adapted to join to other corrosion-resistant piping systems or to standard steel pipe. The saran liner is anchored under pressure in the steel tubing.

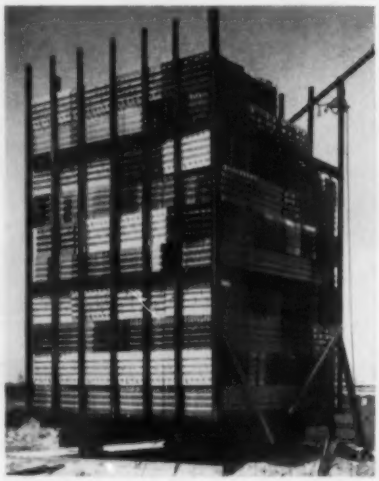
Saran, a vinylidene chloride copolymer resin, is resistant to practically all inorganic chemicals and to most organic solvents and compounds.

Distribution of saran lined products is handled by the Saran Lined Pipe Co., Ferndale, Mich.

Plastic Packing for Biological Waste Treatment

A new approach to the biological treatment of liquid wastes has been developed by Dow Chemical Co. in the form of a plastic packing material designed to improve the conditions under which mirco-organisms oxidize wastes.

The product, trademarked Dowpac, has been field tested in kraft and rag



paper mills. It is made up of many layers of corrugated sheets of Styron (Dow polystyrene) or saran, depending on the type of chemical resistance needed.

The corrugated shape provides large surface areas to which waste-treating bacteria can adhere, and, in addition, permits large volume air flow through the packing to supply the bacteria with necessary oxygen.

Light weight of the packing (one twentieth that of conventional rock packing) permits wide latitude in design of oxidation systems. Dowpac is assembled in self-supporting units and can be stacked as high as 42 feet with simple under drains.

Company spokesmen feel the product will provide the sanitary engineer with a new and important tool in the fight against stream pollution and for the conservation of water supplies.

Cam Actuated Valve

A ball cam actuated manual valve, designed for operation by any mechanism having linear motion, is announced by Valvair Corp., 454 Morgan Ave., Akron, Ohio.

Intended for use on press controls, with air cylinders or similar applications where straight line actuation is desired, the new valve features a ¾ inch diameter hardened stainless steel ball, spun-locked in a stainless steel retainer. This ball rests on three ¼ inch diameter stainless steel carrier balls, in a lubricant-packed cavity. Lubrication is sufficient for the life of the valve, the manufacturer states.

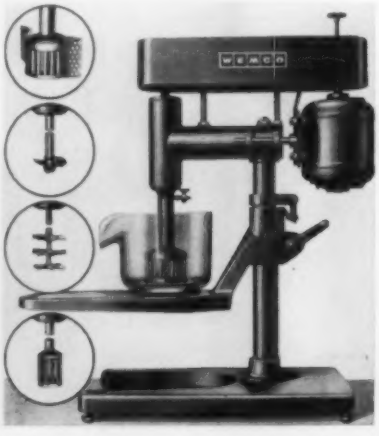
The ball cam end section can be used with any required combination of 2, 3 or 4-way Valvair valve bodies and end sections. 3 and 4-way types are offered with open-end or piped exhaust and all valves are suitable for hydraulic and pneumatic or vacuum service. Port sizes range from ¼ through ¾ NPT, in mounting styles to suit any application.

Multi-Purpose Lab Flotation Machine

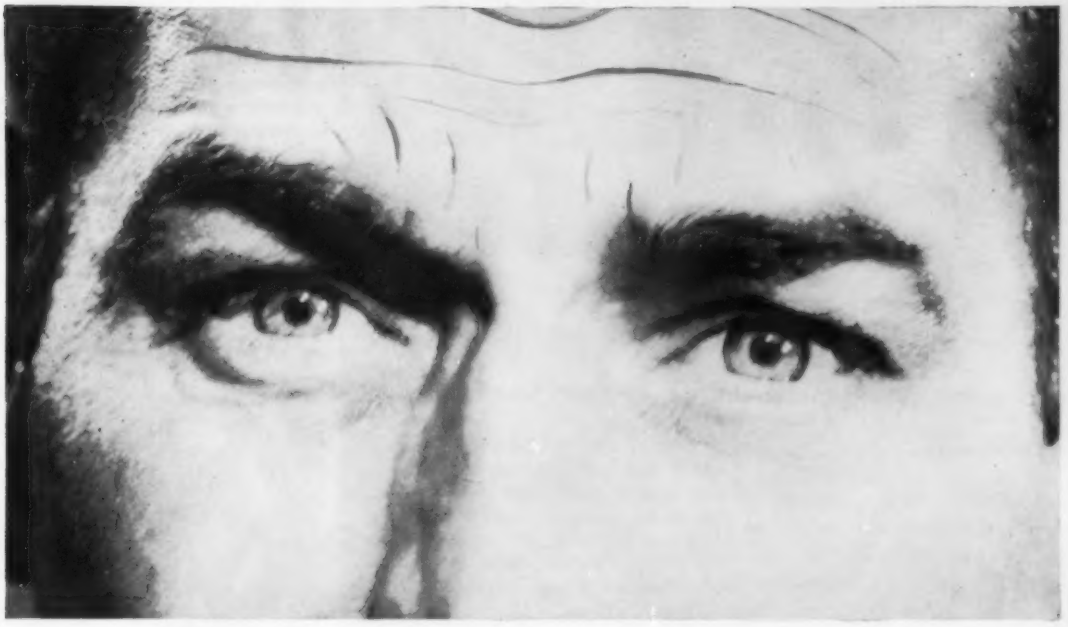
The "Mineral Master", a Fagergren batch type flotation machine utilizing easily interchangeable parts to perform laboratory test work in flotation, agitation, and attrition, has been announced by Wemco.

Features of the new machine include major castings of aluminum and stainless steel impellers designed for easy cleaning. An air inlet has also been designed to facilitate the introduction of gases other than air into the bowl. In addition to two styles of variable pitch sheave drives which are available, the "Mineral Master" can be equipped with a step cone sheave drive.

Manufacturers are Western Machinery Co., 650 Fifth St., San Francisco, Cal.



BURDENED *with Dryer Felt problems?*



Brandon Sales can help you quickly

Avoid the worry and expense of needless downtime! Brandon's experienced staff gives you quick service, no matter when you need it.

Whether you need new felts . . . or services such as pre-stretching, and clipper seams . . . call your Brandon Sales representative. Brandon Makes All Three—Asbestos, Semi-Asbestos, Cotton.

For immediate attention to your dryer felt problems, write:

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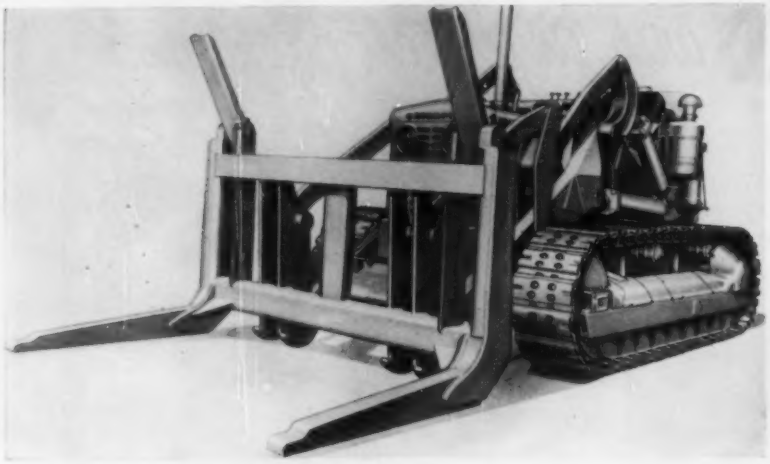
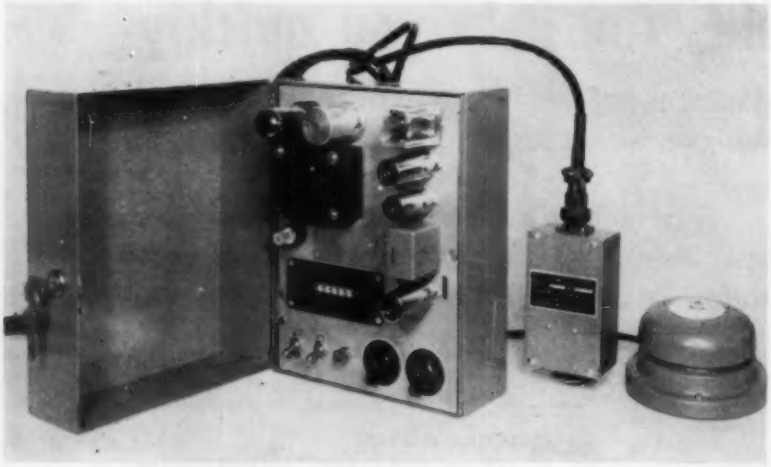
Frank Clawson, Kalamazoo, Mich.
West Coast
M. J. Maguire, Portland, Oregon
Southern States
R. S. (Bob) Davis, Greenville, S.C.

BRANDON DRYER FELTS



Rugged Log Fork Handles Large Timber Loads

A newly-introduced log fork, specifically designed to give increased log-handling efficiency to the Caterpillar No. 977 Traxcavator, has been announced by Caterpillar Tractor Co., Peoria, Ill. The attachment is a special-application tool for handling large loads of timber. The new log fork is intended specifically for handling large logs. It can also handle heavy pipe, or bulky palletized material. Available with the fork are twin, hydraulically operated top clamps, which permit the handling of off-center loads. Maximum lift is 11 feet 10 inches.



Instrument Finds Lumps on the Sheet

The CICO Lump Detector made by the Waldorf Instrument Co., Huntington Station, N. Y. is a non contacting instrument for the detection of lumps on rapidly moving paper webs.

The detector consists of a sensing head which is coupled to one of a set of steel rolls through which the web passes. The rolls react to the passage of the imperfections and the reaction is sensed by the detector and relayed to an alarm or a control circuit.

Inspection of a 10-foot web is accomplished with a single sensing element. Wider webs are inspected by sensing elements mounted both at the front and the back of the machine.

The instrument may be installed on existing equipment, such as calenders, cutting machines, and web printing presses with only minor modifications to the rolls involved. For premium performance a separate set of rolls may be mounted.

Valve Position Indicator

Operating by means of a positive gravity bearing mechanism, the Tejax valve position indicator (illustrated here) enables exact setting of valves to be made time after time.

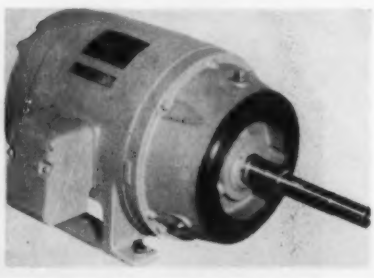
A small pointer counts the number of turns and a large pointer indicates the proportion of a turn in fractions. The indicator is adjustable in its own bracket so settings may be made to compensate for valve wear. Installation consists of simply replacing the standard valve hand wheel with a new handwheel which incorporates the position indicator. Manufacturers are Tejax Engineering Corp., 180 Weeden St., Pawtucket. R. I.

Close-Coupled Pump Motors

A complete line of close-coupled pump motors, standards and specials, from 7½ to 100 h.p., has been announced by General Electric. The 'Tri-Clad' 55 motors are designed to accommodate pumps built to the new, recommended NEMA standards.

Features include a solid cast rotor with no bolted or welded parts to loosen or vibrate, cast iron frames and permanumbered leads for quick identification. Weight reductions up to 33 per cent permit easier installation.

A labyrinth seal on both sides of the housing keeps grease in and dirt out, and a standardized shaft extension and C-face end shield reduce the number of parts often required to meet a wide range of ratings.



THIS IS DRYDEN PAPER COMPANY

Customer's one-word report on this pulp: "WONDERFUL!"

Back in the Spring of 1956, one of America's leading paper makers began to look for ways to improve their products. They realized that, to get a better product, they had to start with a better pulp.

The engineers and lab men at this plant heard reports about a new pulp coming down from Canada—the two-stage chlorine dioxide Northern bleached sulphate pulp that Dryden Paper Company would soon be producing at its new Dryden, Ontario, plant. So these paper men ordered a fifty-pound sample of Dryden, unbleached, so that they could bleach it and follow it through into paper in their own labs.

Their one-word report: "Wonderful!"

Soon after the opening of the Dryden plant in 1957, they contracted for several thousand tons of Dryden pulp for each of the next five years...but they soon came to rely on Dryden as their *only* source for quality pulp, continually upping their shipping orders. 1958 shipments are nearly three times the original tonnage.

Compare Dryden Bleached Sulphate with the best quality pulp you know. You, too, will say it deserves all the laboratory endorsements—*and all the production testimonials*—it now enjoys. Order a trial shipment today.

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DRYDEN, ONTARIO, CANADA

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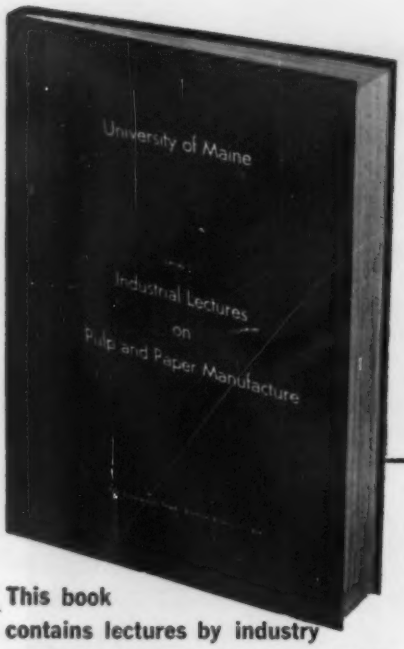

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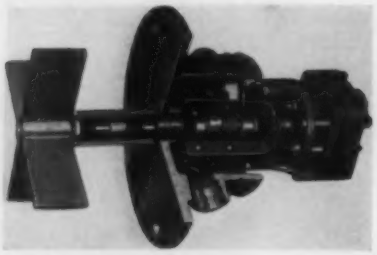

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See Inside an Expansion Joint

Rotherm Engineering Co., Inc., 7280 West Devon Ave., Chicago, Ill., has developed an expansion joint and piping compensator which is available with or without windows to observe what's happening inside condensate lines.

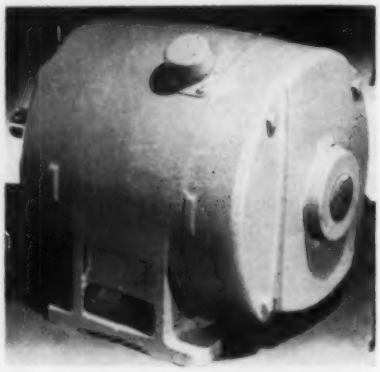
The joints are reported to absorb normal expansion in steam lines. It can take care of misalignment as well as axial expansion, and can be turned up to 360 degrees to absorb piping torque strains.

Inherently Protected Three-Phase Motors

A new line of inherently protected, three-phase, small integral-h.p. motors, designed to respond to both current and temperature for protection against excessive overload currents, stalls, single-phasing and high ambient temperatures, has been announced by General Electric's small integral motor dept.

An inherent protection device, located on the motor frame and protected by a pressed-steel cap, contains a snap-acting thermal disk, three contacts and three heating elements in a molded phenolic base. Connections are made at the neutral point of the three-phase, Y-connected motor.

Each protector contact and its heating element is in series with the Y-connection neutral point and a phase of the motor winding. When the thermal disk snaps open, either from high ambient temperature or from excessive motor current, the connection is broken at the neutral point interrupting the current in all three motor winding circuits. After the motor cools, the protective device resets automatically and motor operation is resumed.



Efficient Chain Lubricant

Lehigh Chemical Co., of Chestertown, Md., is marketing a new synthetic chain lubricant, Anderol L-732. This material effectively overcomes the many problems previously associated with chain lubrication.

Unlike the light penetrating oils commonly used to lubricate chains, L-732 is a very tacky, semi-fluid grease. It will flow to some extent, but it retains a gel structure that lubricates as a grease, giving much longer lubrication periods. Also, being tacky, it completely resists wipe-off, throw-off, and run-off . . . and it will remain effective from six months to over a year.

Being a synthetic, the product reportedly will not gum nor will it leave a varnish residue. In fact it is claimed, the grease will dissolve most deposits which have already formed on the chain.

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NEWS OF SUPPLIERS

F. Buchanan
General Mills

J. C. Donald
Dewey & Almy

General Mills announces that Fred Buchanan, associated with the paper industry for nearly 30 years, has joined its Special Commodities Division. He will represent the division in the sale of guar products, headquartering in the company's general office, Minneapolis.

His previous positions of responsibility in the paper field include associations with Crystal Tissue Co., Waldorf Paper Products, and National Gypsum.

Cy Ducharme and Don Korn, representing General Mills' Special Commodities Division in the sale of guar products, have been transferred from the company's general office in Minneapolis. Mr. Ducharme goes to the southeast and south central states, with headquarters in Jacksonville, Fla.; and Mr. Korn will work in New England, other eastern states and eastern Canada.

Dewey and Almy Chemical Div., W. R. Grace & Co. has added James C. Donald to its organic chemicals sales force. He was formerly with Air Products, Inc., Allentown, Pa., and E. I. DuPont de Nemours, Wilmington, Del.

Kamyr Inc. announce the design of a Kamyr continuous cooking unit capable of producing 550 to 600 tons per day of top quality bleachable kraft pulp. The largest unit in operation today can produce 350 tons per day. In spite of the large production the 550 ton unit needs only a floor area of 3200 square feet.

American Cyanamid Co. has appointed Joseph D. Lowery assistant general sales manager of the Industrial Chemicals Division.

A veteran of 36 years with Cyanamid, Mr. Lowery was formerly the manager of the company's Heavy Chemicals Department.

Stauffer Chemical Co. announced that sales of Lustraglue, produced at Woburn, Mass., formerly handled by its Consolidated Chemical Industries Division, will now be integrated with Stauffer's Industrial Sales Division.

Walter Bangert, who has had 25 years of experience with the glue division, has been appointed eastern sales manager for adhesives and will be responsible for the Lustraglue marketing program. Mr. Bangert succeeds Herman Owen, who reached retirement age after 26 years of service with Stauffer.

Graver Tank & Mfg. Co. Inc., International Division, has established an office in Caracas, Venezuela. William I. Woodson has been appointed general manager of Venezuelan operations.

Graver's International Division was established last January and maintains operations around the globe outside the U.S.

Wired-for-action display featuring the paper industry and the contribution chemicals have made to the usefulness of its products has been added to Cyanamid's New York Exhibit Center. Based on the theme of "Test Your P. I. Q." (Paper Intelligence Quotient), the exhibit offers a series of questions which viewers can try to answer. Inspecting construction of one of the panels are J. C. Barthel, Mary Rita O'Rourke and John M. Walsh of the Paper Chemicals Dept., American Cyanamid Co.

"So I said, 'J. B., you'll have to prove to me that a college degree is more valuable than 20 years experience.'"

R. Steinbruch
Min. & Chem.

D. E. Zeller
Amer. Cyanamid

Minerals & Chemicals Corp. of America has appointed Robert Steinbruch manager of contract research. He will devote his activities to the utilization of M&C's extensive and diversified research facilities for sponsored research and development work.

American Cyanamid Co. has transferred Dwight E. Zeller to the Chicago sales office of its Pigments Division. He will be a sales representative in the metropolitan Chicago area.

Mr. Zeller has been with Cyanamid since 1946 when he joined the company's Organic Chemicals Division.

Dow Chemical Co. has appointed G. J. Williams to succeed Donald L. Gibb as sales manager of its plastics department. He has been assistant to the sales manager since 1956.

Albany Felt Co. has appointed Gerald L. Harrison and Beverly T. Adams as chemists in its research and development laboratory.

Mr. Harrison was formerly a chemist with Collins & Aikman in Philadelphia. Mr. Adams was a chemist and assistant dyer with John Zimmerman & Sons of Philadelphia, Pa.

American Potash & Chemical Corp.'s new sodium chlorate plant at Aberdeen, Miss., is expected to begin production late this year according to schedule. The new plant is located on a 770-acre site on the Tombigbee River ten miles south of Aberdeen.

Initial production capacity will be at the rate of 15,000 tons of sodium chlorate per year, with provisions for possible future expansion as might be required. One such possibility would be the production of perchlorate chemicals for high energy fuel applications.

The Glidden Co. announces that its Chemurgy Division has become the Chemurgy Division of Central Soya Co. Inc. No change in personnel or operation of the division is contemplated. They will continue to produce and supply the same soybean products. Orders for these products, as in the past, should be directed to Chemurgy headquarters in Chicago.

OBITUARIES

T. Raymond Pierce, 79, president of the Wellesley Cooperative Bank and a retired vice president and director of the former Robert Gair Co. of New York City, died August 21 in Boston.

In 1932 he was elected a director of the Gair Co., and he served in that capacity, with one brief interruption, until that company was absorbed by Continental Can Co. in 1956. He was a vice president of the Gair Co. from 1939 to 1949.

Jesse W. Mack, 71, died August 23 of an apparent heart attack. He retired 12 years ago as secretary-treasurer of the Oklahoma Paper Co.

Oscar E. Larson died August 14 at Peralta Hospital, Oakland, Calif. He had served as plant manager of Emerson Manufacturing Co. Division of John W. Bolton & Sons, Inc. during the war and more recently as manager of the western sales region.

Edwin Morris Cowling Jr. died suddenly at Richmond, Va. August 24 after little over a year's retirement. He had been with Fraser Paper Ltd. both in New York and Chicago since 1940.

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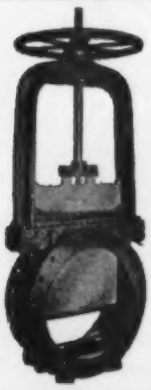

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Fig. 1834 Constant Level Oil Control

Fig. 1815 Globe Body Bottle Oiler

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1—32 x 45 Sheridan Model 8-D Embosser

BEATERS
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54″ x 48″, cast iron tubs.

CALENDER STACKS
1—3 roll 84″ calender stack.
1—4 roll 72″ Calender Stack. (Extra heavy duty).
1—5 roll 82″ face.
1—5 roll 86″.
1—7 roll, 84″ face.

CHIPPERS
1—96″ Murray 4 knife Chipper—anti-friction bearings.
1—84″ 10 knife Carthage Chipper. Anti-friction bearings.
24—Chipper Knives 15⅞ x 8¼, 2 slot.

COUCH ROLLS
4—Practically new, rubber couch rolls, 18″ diameter x 78″ face.

CREPING DRYER
1—48″ diameter x 120″ face, with frames, bearings, doctor blade and drive.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Jeffrey Hammermill (18″ dia. rotor).

CYLINDER MOLDS
2—42″ diameter x 108″ face.
8—36″ diameter x 94″ face, hollow shafts, Very good condition.
1—30″ diameter x 72″ face.
1—30″ diameter x 92″ face.
1—36″ diameter x 84″ face
2—36″ dia. x 54″ face.
2—36″ diameter x 110″ face.
3—36″ diameter x 90″ face, 18″ diameter couch rolls.
1—60″ dia. x 170″ face.

DIGESTERS
1—Biggs 12′ 6″. (Globe)

DISINTEGRATOR
1—Shartle 8″ disintegrator (new) with 125 horsepower induction motor. (Totally enclosed)

DRIVES
1—Rice-Barton hypoid enclosed drive, 4 to 1 ratio.
1—#6 Reeves vertical—anti friction bearings, totally enclosed.
1—Sandy Hill right angle 50 H.P. (4.75 to 1).
1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)
3—Rice Barton enclosed drives, double reduction (14 to 1 one end, 4 to 1 other end)
1—Beloit hypoid enclosed drive 60 h.p. 5 to 1 ratio.

DRYERS
1—28″ diameter x 84″ face
2—30″ diameter x 40″ face with bearings
2—30″ diameter x 48″ face with bearings.
60—36″ diameter x 84″ face, complete with frames, gears & bearings.
4—48″ dia. x 52″ face with frames, gears, bearings
1—36″ diameter x 44″ face
3—36″ diameter x 76″ face.
6—36″ diameter x 80″ face.
22—28″ diameter x 40″ face with frames, gears and felt rolls
1—16″ diameter x 54″ face (steel)
6—48″ diameter x 130″ face.
2—Cooling Drums, bronze 36″ x 128″, with frames, gears & necessary rolls to make up the unit. (After dryers)

EMBOSSING CALENDERS
1—43″ 3-Roll Embossing Calender.
1—62″ 2 roll Embosser

EXTRACTOR ROLLS
1—Extractor roll, 26″ diameter x 104″ face
1—Rice Barton & Fales, Extractor Roll, 26″ diameter x 104″ face

FELT CONDITIONERS
1—Scofield, 125″ face
1—Scofield, 154″ face

FELT ROLLS
50—Brass Felt Rolls, with Brass Journals, 72″ face x 5″ dia.

FLAT SCREENS
1—8 Plate "Packer"
1—12 Plate "Packer"
1—16 Plate "Packer" late type roller shoes.

JORDANS
1—Noble & Wood Mammoth
1—Noble & Wood Monarch, Type D.

LABORATORY EQUIPMENT
1—Bauer-McNett Fibre Classifiner, monel tanks, complete with copper screen plates.
2—12″ x 12″ Reener Vibrating Screens, stainless steel, with motors.
1—Basis weight scale
1—16″ diameter x 24″ face Laboratory High Pressure Dryer
1—Press Roll 6″ diameter 24″ Face, steam jacketted
1—¼″ Extruding Head
1—2′ Shartle Hydrapulper
2—8″ x 8″ Valley Sheet dryers
1—12″ x 12″ Valley Sheet dryer
1—6″ diameter Hydraulic Press
1—25 lb. Valley Laboratory Beater, with washer.
1—Vissolver
1—Glarometer
1—15 lb. Dilts Hollow Mid Feather Laboratory Beater, antifriction bearings. Complete with washer.
1—Alsop Filter Press
1—Experimental Digester (High Pressure)
1—Sutherland Refiner

LAMINATING MACHINES
2—84″ Asphalt laminators.

MISCELLANEOUS
1—#1 Miami Selectrap

PACKAGING MACHINE
1—Morpac Packaging Machine (Details on request).

PRESS ROLLS
2—Chilled iron, chrome plated 9″ x 72″
1—Chilled iron, chrome plated 12″ x 100″
1—Chilled iron, chrome plated 10″ x 74″
8—sets (1 rubber, 1 chrome steel) 74″ face x 15″ dia., complete with bearings.

PULPERS
4—Dyno-Pulpers

PUMP
1—Morris-10,000 g.p.m. 25 ft. head (all bronze)

REELS
1—86″ 2 bowl reel.
1—84″ 3 bowl revolving reel.
1—100″ Rice Barton 2 bowl Reel, heavy duty.
1—123″ 3 bowl Revolving Reel
1—134″ 2 drum
1—72″ Downingtown Reel, 2 bowl.

REFINERS
1—#2 Claffin refiner
1—Dilts Classifiner, practically new
1—Rice Barton Dynofiner, details on request
1—Dilts, Hydrafiner, stainless steel filling, anti-friction bearings, excellent condition, including 125 h.p. motor
1—12″ Wiener Refiner, with 200 h.p. motor

REGULATORS
1—Bird Consistency Regulator
1—Trimbey Consistency Regulator

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
6—Trimbey Sr. Pulp Screens.
1—#1A Bird, copper vat.
2—APMEW Rotary Pulp Screens.

SAVEALL
1—LaMorte, 48″ diameter x 82″ face cylinder mold.

SCREEN PLATES
Bird Rotary screen plates.

SHEETER
1—132″ Hamblet heavy duty duplex sheeter, anti-friction bearings throughout, including layboy and backstand.
1—84″ Hamblet, duplex, back stands.

SHREDDER
1—16″ "Swift" Paper Shredder

SLITTERS & WINDERS
1—32″ Cameron Type 9
1—42″ Cameron Type 9
3—42″ Cameron Type 6
1—42″ Cameron Type 8
1—42″ Cameron Type 26-2A
1—42″ Cameron Type 26-3A. (Duplex)
3—50″ Cameron Type 6
1—62″ Cameron Type 6
1—62″ Cameron Type 8
1—72″ Cameron Type 9
1—84″ Cameron Type 12
1—150″ Cameron Type 18
1—86″ Two Drum Moore & White 50″ diameter rewind.
1—96″ 4 drum Moore & White winder
1—128″ Beloit Shear cut winder, drive and variable speed motor.

SLITTING DEVICE
84″ Quick change slitting device shear cut, complete, practically new.

STEAM JOINTS
18—3″ Johnson steam joints (new)

STOCK MAKER
1—Morden Stock Maker, 150 h.p. motor

STOCK PUMP
1—10 x 20 Shartle Triplex

STRAINER
1—Elliott Twin Strainer, Type R

SUCTION BOXES
2—150″ Stainless steel Suction Boxes

SUCTION COUCH SHELL
1—Downingtown suction couch shell only, 127¼″ face x 26″ diameter

SUCTION COUCH ROLLS
1—Beloit, 36″ diameter x 246″ face, SKF bearings.
1—Millspaugh, 30″ diameter x 154″ face, trunnion anti friction bearings.

SUCTION FELT ROLLS
1—Gilbert & Nash 122″ face
1—Beloit Rubber Covered Suction Felt Roll 109 face x 20½″ diameter.

SUCTION PRESS ROLL
1—Sandusky 126″ drilled face, suction press roll 18″ diameter

SUCTION PRESS SHELL
1—14″ diameter x 100″ drilled face, suction Press Shell only.

SUPER CALENDER STACK
1—9 Roll 56″

TABLE ROLLS
22—Rubber Covered 10″ diameter x 246″ face
30—4″ dia. x 130″ face (will cut to size)

THICKENERS
2—Iron End Vats with 36″ diameter x 84″ face Cylinder Molds and 20″ diameter couch rolls, including spare cylinder molds and spare couch rolls, all anti friction bearing equipped.

TOILET WINDERS
2—72″ Hudson-Sharp (Surface type winder)

TRIMMER
1—84″ Seybold

VACUUM PUMPS
3—#1 Nash Hytor vacuum pumps
1—#7 Nash Hytor vacuum pump with 75 h.p. synchronous motor.
2—Connersville, 14 x 20
1—H-7
1—#3 Nash Hytor
3—L-5 Nash Vacuum Pumps
1—L-6 Nash Vacuum Pump

VATS
2—D. J. Murray Co. Vats, iron ends, for 42″ x 120″ cylinder molds, overflow and counterflow.

VIBRATING SCREENS
2—Hummer electric Vibrating Screens, stainless steel, new
1—Selectro 2 stage, 5 ft. x 10 ft.
1—36″ x 48″ Vibrating Screen

WEB GUIDE
1—110″ Stanford Constant Tension Unit, air operated.

YANKEE DRYERS
1—140″ face x 12′ dia., anti-friction bearings & stands.
1—84″ diameter x 56″ face.

Paddy Ross, Pres. **J. J. ROSS COMPANY** Ben Kurs, Treas.
377 Frelinghuysen Ave.* **Tel—Bigelow 3-3720** **Newark 12, N. J.**

Help Wanted

TOUR BOSS WANTED

For Fourdrinier fast running machines on kraft liner board, rotating each week; location Midwest. Employer will pay expense for interview, also moving and transportation expense if employed. If available send, promptly, resume to

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass. Phone LIberty 2-6547 S-15

PROJECT ENGINEERS

New positions open to Graduate Mechanical Engineers, age 25-30, to act as Project Engineer for Development Work on paper and converting machinery. Applicants should have experience in machinery design and should have a good foundation in the principles of stress analysis and kinamatic design, particularly as it applies to high speed automatic and semi-automatic process machinery. These engineers will be headquartered at the Equipment Engineering Section at Covington, Virginia. Traveling will be required since a major part of their duties will be coordination between research and development and the various plants.

Address: Research Director, West Virginia Pulp and Paper Company, Research and Development Laboratory, Covington, Virginia.

S-22

PAPER CONVERTING MACHINERY DESIGNER

Wanted by manufacturer of paper and film bag machinery and printing presses.

Located in pleasant New Jersey community.

Degree not necessary—only the ability and practical background for independent design of converting machinery.

Excellent opportunity for capable man. Salary open.

Please send resume of experience. Box 58-13 care Paper Trade Journal.

TF

WANTED—TOUR BOSS

For alternating second and third shifts in a one-machine mill making high quality papers, white and colors.

Splendid opportunity for a man qualified for such a position.

Address Box 58-226, c/o Paper Trade Journal.

State age, experience and other pertinent details.

S-15

Help Wanted

WANTED

Young man for development work on paper machine in small West Coast mill involving large range of grades. Should have some machine experience, be mechanically inclined, and have aptitude for practical machine operation and adjustment. Education in trade helpful, not required. Opportunity here for experience, advancement, training. Submit record of experience and education to: Box 58-215 care Paper Trade Journal.

S-15

WANTED

Young man with practical experience to perform pilot plant mill maintenance in experimental operation on the West Coast. Should have experience in pilot mill piping, pumps, experimental pulp preparation equipment and electrical wiring, motor control circuitry. Indicate education, experience and equipment familiarity to: Box 58-214 care Paper Trade Journal.

S-15

CHEMIST

Graduate chemist required for control and development work in the paper converting field. Experience in paper coating desirable. Excellent opportunity to assist in group supervision of medium sized Laboratory located in midwest. Attractive employee benefit plan. In reply give age, experience and salary requirement to Box 58-234, Paper Trade Journal. S-22

Situations Wanted

SELLING OPPORTUNITY

Located in New England—desires exclusive representation for one or more chemical companies or processing equip. mfgr. with products well established in paper industry. Have successful Mill Sales experience Write to Box 58-228 Paper Trade Journal.

S-15

ENGINEER

M.E. with very extensive experience covering many years in the pulp, paper and board industry as Plant Engineer, Chief Engineer and general production supervision. Qualified for engineering, construction and maintenance supervision. Renovation and modernization. Mills and power plants. Address Box 58-230 care Paper Trade Journal. O-6

COARSE PAPER SALESMAN—12 years experience with distributor—desires connection with mill to sell direct or through distributors. Address Box 58-221 care Paper Trade Journal. S-1

EXECUTIVE—Conversion of Boards and Papers. Currently Works Manager; desire change for challenging opportunity. Highly successful record in organization, production and development. Address Box 58-122 care Paper Trade Journal. S-29

BARGAINS

IMMEDIATE DELIVERY

1—66" Holyoke 9-Roll Super Calender Stack, Complete. Rebuilt and used but a short time, in A-1 condition. Drives and spare Rolls.
1—128" 8-Roll Bagley & Sewall Calender Stack, king roll 24" dia., 4 intermediate rolls 12" dia., top roll 16" dia. Heavy box frames, full set of doctors. Excellent Condition.
26—36" x 72" Complete Dryer Section, Stock, Drives, Etc.
10—48" x 150" Pusey & Jones Dryers.
1—84" Kamyr Machine, Complete, 75 Ton per day output.
3—No. 1 Jones Refiners, Late Type. A.F. Bearings.
1—E.D. Jones Imperial Jordan, S.S. Filling.
1—Noble & Wood Mammoth Jr. Jordan, S.S. Filling.
1—Monarch Jordan, Model SP, Serial #21095, no fillings. Direct connected to a 75 H.P. G.E. 400 RPM Motor.
1—14 Plate Impco Flat Screen, Dunbar Drive, Bronze Vat, Direct Motor Driven.
1—A.P.P. Rotary Centrifugal Pulp Screen, 40" Dia. x 42" Face. Serial #1274227. Like new. Capable of 40 ton groundwood pulp per day.
1—Trimbey Senior Rotary Screen.
2—Impco Rotary Pulp Screens.
3—No. 3 Impco Rotary Knotter Screens. S.S. Plates.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—Hudson Sharpe Toilet Tissue Converting Machine. Serial No. 2123. 8 Spare Mandrel Bars.
1—42" Dia. x 110" Face Pope Type Reel. Excellent Condition.
1—25" Dia. x 156" Face Sandusky Suction Couch, Bearings & Stands.
1—No. 6 Nash Hytor Vacuum Pump.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—Sandy Hill Sulphur Burner, Complete.
5—Press Sections—One each of 72", 82", 84", 110" and 112".
1—Tugboat Annie Pulper.
1—Worthington Air Compressor, Model 5TR2, 2-Stage, Air Cooled, 21.6 CFM, 5 H.P. 80 Gal. Pressure Tank, 100 P.S.I.G. Like new.
1—C.P. 12 x 10 Air Compressor. 100# Pressure.
1—I.R. 7 x 7 Air Compressor, 100# Pressure
1—No. 244 Mattison 18" Core Cutting Saw —5 H.P. 3450 RPM, 3/60/220-440 volt. Complete with Conveyer.
1—90 H.P. Terry Turbine, Type G-4000/-1000 RPM, For Paper Machine Drive. Complete.
1—No. 2 Jones Pulper, A.F. Bearings, Spare Worm.
1—36" Putman H.D. Lathe—15' Centers.
1—24" x 6' Lodge & Shipley Geared Head, H.D. Machine Lathe, Taper Attachment, Hollow Spindle, Motorized.
1—100 H.P. U.S. 3/60/220-440 Volt, 900 RPM, D.P. Motor.
1—A.C. 75 H.P. 3/60/220-440 Volt, 720 RPM, T.E.F.C. Type ARZX Motor.
1—A.C. 60 H.P. 3/60/220-440 Volt, 720 RPM, T.E.F.C. Type ARZX Motor.
1—G.E. 100 H.P. MG Set, 250 Volt D.C.
1—250 H.P. Ingersoll Rand Diesel Engine Generator—G.E. Generator, 150 KW, 480 Volts, 720 RPM.
Gear Reducers, P.I.V. Drives, Gearmotors, S.B. Pumps, Stock Pumps, Plunger Pumps, Etc. 1000 Electric Motors from ¼ H.P. to 600 H.P. in Stock.

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

We also have a large inventory of new and used flanged fittings of all types at very low prices.

Write—Wire—Phone For Your Needs

Ruderman Machinery Exchange
GOUVERNEUR, NEW YORK
Telephone 333-334

TF

FOR SALE

Two paper machines, can be inspected while now operating.

One is 82" x 54 ft. 10" wire Fourdrinier with three presses. First section of dryers 18—48" x 76", double deck, top and bottom felt equipment. Size press. Second section of dryers consists of 6—48" x 76", top and bottom felt equipment. 2 calenders, reel, winder, drive, prime mover, pumps, as last operated, including L 7 Nash, No. 5 Bird Saveall, DeZurik consistency regulator, 4 Vortraps, Jones Imperial Jordan, 3A Bird screen. Machine last producing about 16 to 18 tons of 20 to 60 lb. Bond.

Second machine is Fourdrinier with wire 65" x 32 ft. 11" wire. Has 14" suction couch, 3 presses, 30 dryers 28 x 72" with top and bottom felt equipment in First Section. Size press. In Second Dryer Section there is 24" lead dryer and 6 dryers 36" x 72" with top and bottom felt equipment. 5 roll calender. Reel. Moore & White cutter with layboy. Drive including prime mover. Two L 6 Nash pumps. Pony Jordan. Last producing about 6 to 10 tons sixty to eighty lb. Bond.

Frank H. Davis Company, 175 Richdale Avenue, Cambridge, Massachusetts S-29

Situation Wanted

CONVERTING SUPERVISOR

Unusual record in Labor Relations, Planning and Production. Eleven years with present employer. High regard for degrees but do not have any for myself.

Would not hesitate to take position outside Continental U.S.A. if benefits merit it. Complete resume furnished upon request.

Address Box 58-229 care Paper Trade Journal. S-22

For Sale

FOR SALE

ONE CARTHAGE 38" x 5' HYDRAULIC WOOD SPLITTER, COMPLETE WITH PUSH BUTTON CONTROLS. PURCHASED NEW IN 1957 AND IN EXCELLENT CONDITION. CAN BE INSPECTED.

REPLY BOX 58-237 care PAPER TRADE JOURNAL. S-29

REBUILT — GUARANTEED
NASH VACUUM PUMPS

In Stock, following sizes:
H-10, H-7, H-6, L-5, L-4, TS-7, #4, #2

Brill Equipment Company
3481 Third Ave., New York 51, N. Y.
Cypress 2-5703 S-15

FOR SALE

1—56" 6 color Kidder Master Aniliner. Complete with drive.

A-1 condition. For further particulars address Box 58-239 care Paper Trade Journal. S-15

A small Classified ad often brings big results

For Sale

SAVE OVER 50%
NEW JORDAN FILLINGS

1 set—$\frac{1}{8}$" S. S. Mammouth Jr. Shell Filling
1 set—$\frac{1}{4}$" S.S. Mammouth Jr. Plug Bars
1 set—$\frac{1}{8}$" S.S. #1 Emerson Plug Bars
1 set—$\frac{1}{4}$" C.S. #1 Emerson Plug Bars
1 set—$\frac{1}{8}$" Bronze Jones Majestic Shell Filling
1 set—$\frac{1}{4}$" Bronze Jones Majestic 30½" Plug Bars
1 set—$\frac{1}{8}$" Bronze Jones Majestic 30$\frac{1}{16}$" Plug Bars
3 sets—$\frac{1}{4}$" C.S. #2 Miami Wedgeless Plug Bars
1 set—$\frac{1}{8}$" S.S. #2 Miami Wedgeless Plug Bars
1 set—$\frac{1}{4}$" C.S. #2 Miami Wedgeless Plug Bars
1 set—$\frac{1}{8}$" C.S. #2 Miami Wedgeless Plug Bars

Also, over 500 S.S. and Brass Flat Screen Plates from .006 to .012 cut.

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
Telephone 333-334 TF

JUST RECEIVED

1—86" Farrell 8-Roll Calender Stack, Anti-Friction Bearings—Excellent Condition.
1—E. D. Jones Majestic Jordan No. A-482—New Fillings, Anti-Friction Thrust Bearing.
1—Dilts 2000# Iron Tub Beater—Roll Size 53" x 60", S.S. Extractor Type Hood.
1—130" B & S Drum Winder—Shear Cut Slitters.
1—130" B & S 2-Drum Upright Reel.
1—138" x 22" Suction Couch—Complete with Spare Shell.
1—10-Knife Carthage Chipper.
4 Presses—110"—128"—132"—140".

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
Telephone 333-334 TF

The job you want may be waiting for you in our Classified Advertising section — have a look.

Wanted

WANTED

Good used 40" or 50" Model C Fales Slitter and Rewinder. Address Box 58-236 care Paper Trade Journal. S-15

WANTED

Screens, either late type Shartle or late type Bird, suitable for seven to ten ton each per 24 hours. Could also use Bird Vibrator Screens or Shartle Selectifier Screens for smaller tonnages. Box 58-238 care Paper Trade Journal. S-29

Sales Representation

Australia and New Zealand

Paper and Pulp Mill consultant with excellent connections, paper making and converting industries, in above countries. Will visit North America in October and would like to contact firms requiring representation. Reply to Box 58-240 Paper Trade Journal, New York, N. Y. S-15

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U. S. SAVINGS

BONDS

ADVERTISERS

Adell Chemical Co. ..... —
Albany Felt Co. 19
Allied Chemical Corp. Nitrogen Div. ..... —
Allis-Chalmers Mfg. Co. 39
Aluminum Co. of America .... —
American Bitumuls & Asphalt Co. ..... —
American Bridge Div., U. S. Steel Corp. ..... —
American Cyanamid Co., Paper Chemical Dept. ..... —
American Cyanamid Co., Dyes Dept. ..... —
American Cyanamid Co., Organic Chem. Div. ..... —
American Cyanamid Co., Pigments Dept. 17
American Potash & Chem. Corp. ..... —
American Steel & Wire Co. .. —
Ames Company ..... —
Anglo Paper Products Ltd. 61
Annin Company ..... —
Antara Chemicals, Sales Div. Gen Aniline & Film Corp. .. —
Apmew, Inc. ..... —
Appleton Machine Co., The ... —
Appleton Wire Works ..... —
Appleton Wood Products Co. .. —
Armco Drainage & Metal Products ..... —
Armco Steel Corp. ..... —
Armstrong Machine Works ... —
Arnold Hoffman & Co. ..... —
Asten-Hill Mfg. Co. ..... —
Aurora Pump Div., N. Y. Air Brake ..... —

Babcock & Wilcox Co. ..... —
Bahr Bros. Mfg. Co. ..... —
Bailey Meter Co. ..... —
Bauer Bros. Co. ..... —
Beloit Iron Works Co. ..... —
Bird Machine Co. 29
Bixby, R. W., Inc. ..... —
Black-Clawson Co. 43
Blaw-Knox Company ..... —
Bolton & Sons ..... 3&69
Borden Co. 13
Bowsher Co., N. P. ..... —
Brandon Sales, Inc. 59
Broughton, A. E. & Co. ..... —
Brown Company ..... —
Buckeye Cellulose Corp. ..... —
Buell Engineering Co. ..... —
Buffalo Forge Co. ..... —
Buffalo Pumps, Inc. ..... —

Cady, E. L., & Co. 64
Calgon Company ..... —
Cambridge Instrument Co. ... —
Cameron Machine Co. ..... —
Capitol Products Corp., Read Standard Div. 57
Carlon Products Corp. ..... —
Carthage Machine Co. ..... —
Central National Corp. ..... —
Chicago Bridge & Iron Co. .. —
Ciba Company ..... —
Cities Service Oil Co. ..... —
Clark-Aiken Company ..... —
Classified Advertising 70
Clearing House 70
Cleveland Crane & Engrg. Co. —
Cleveland Worm & Gear Co. —
Colonial Plastics Mfg. Co. ... —
Columbia-Geneva Steel Div., U. S. Steel Corp. ..... —
Columbia-Southern Chem. Corp. Sub. of Pittsburgh Plate Glass Co. ..... —
Combustion Engrg. Co. ..... —
Conveyair Sales Ltd. ..... —
Corn Products Sales Co. ..... —
Crane Co. ..... —

Davis, Frank H., Co., Inc. 73
DeZurik Corporation ..... —
Dewey & Almy Chem. Co. 45
Diamond Alkali Co. ..... —
Dicalite Div., Great Lakes Carbon Corp. ..... —
Dierks Paper Co. ..... —
Dilts Machine Works 43
Dixie Bearings Div. of Bearings, Inc. ..... —
Dodge Mfg. Co. ..... —
Dorr-Oliver ..... —
Dow Chemical Co. ..... —
Dowell ..... —
Draper Bros. Co. ..... —
Dryden Paper Co., Ltd. 61
du Pont, E. I., de Nemours & Co., Dyestuffs Dept. .....37&38
du Pont, E. I., de Nemours & Co., Electrochemical Dept. .. —
du Pont, E. I., de Nemours & Co., Pigments Dept. ..... —

East Texas Pulp & Paper Co. —
Eaton Manufacturing Co. 21
Ebasco Services, Inc. ..... —
Egan Frank W., & Co. ..... —
Elixman Paper Core Co. 67
Elliott Company ..... —
English China Clays Sales Corp. 67

FabriValve Company ..... —
Fairbanks Morse & Co. ..... —
Falk Corporation ..... —
Farrel-Birmingham Co., Inc... —
Farval Corporation ..... —
Fibrecast Company ..... —
Fife Manufacturing Co. 68
Fitchburg Screen Plate Co. .. 67
Foxboro Co. ..... —
Fraser Companies, Ltd. ..... —
Frederick Iron & Steel Co. .. —

Garlock Packing Co. ..... —
Gaspesia Sulphite Co. Ltd. ... —
Gates Rubber Company 16
Geigy Chemicals Corp., Geigy Dyestuffs Div. .....Front Cover
General Dyestuffs Co. ..... —
General Electric Co. ..... —
General Tire & Rubber Co. .. —
Gibbs-Brower Co. 70
Gilbert & Nash Co. ..... —
Glidden Company ..... —
Goodrich Industrial Prod. Co. —
Gottesman & Co. ..... —
Grace, W. R., & Co., Dewey & Almy Chem. Div. 45
Graton & Knight Co. ..... —
Graver Tank & Mfg. Co. ..... —
Grinnell Co., The ..... —
Gruendler Crusher & Pulv. Co. —
Gulf Oil Corporation ..... —
Gurley W. & L. E. ..... —

Hagan Chemicals & Controls Corp. ..... —
Hamblet Machine Co. ..... —
Harbison-Walker Refractories —
Hendrick Mfg. Co. ..... —
Hercules Powder Co. ..... —
Hooker Electrochemical Co. .. —
Huber, J. M., Corp. ..... —
Hudson Sharp Machine Co. ... —
Hungerford & Terry, Inc. .... —
Huyck, F. C. & Sons ..... —

Improved Machinery, Inc. 12
International Paper Co. ..... —

Jenkins Brothers ..... —
Johns-Manville Corp. 6
Johnson Corp., The ..... —
Johnson, Alvin H., & Co. 64
Jones, E. D., & Sons Co. .... —
Jones & Laughlin Steel Corp. .....Cover 3

Kalamazoo Tank & Silo Co. .. —
Kidder Press Co. ..... —
Knox Woolen Co. 69
Koppers Company ..... —

Langston, Samuel M., Co. .....Back Cover
Link Belt Co. ..... —
Lockport Felt Co. ..... —
Lockwood Greene Engineers .. —
Lodding Engineering Co. 10
L. O. F. Glass Fibers Co. 52
Lukens Steel Co. ..... —
Lunkenheimer Co. 68
Lyddon & Co. ..... —

Magnus Metal Corp. ..... —
Main, Charles T., Inc. 66
Manchester Machine Co. ..... —
Marathon—A division of American Can ..... —
Marathon Electric Mfg. Corp. —
Mead Pulp Sales, Inc. ..... —
Meincke, A. M. & Son ..... —
Merrick Scale Co. ..... —
Minneapolis-Honeywell ..... —
Mixing Equipment Co. 22
Moore & White Co. ..... —
Morden Machines Co. 11
Mt. Hope Mchy. Co. ..... —
Mt. Vernon Mills Inc. ..... —
Murray, D. J., Mfg. Co. ..... —

Nash Engineering Co. ..... —
National Lead Co., Magnus Metal Div. ..... —
National Starch Products, Inc. ..... —
National Tube Div., U. S. Steel Corp. ..... —
Nelson Company ..... —
New Jersey Zinc Co. ..... —
Nichols Eng. & Research Corp. 53
Noble & Wood Mch. Co. .... —
Nopco Chemical Co. ..... —
Northeastern Paper Sales 61
Norton Co. ..... —

Oakite Products Inc. ..... —
Ohio Injector Co. 2
Olin Mathieson Chem. Corp. 14-15
Osborne Paper Mill Equip. Corp. ..... —

Palladino, Anthony I. ..... —
Paper Converting Machine Co. 18
Parsons & Whittemore ..... —
Patton Mfg. Co. ..... —
Penick & Ford, Ltd. ..... —
Perkins, B. F., & Sons, Inc. .. —
Perkins Goodwin Co. ..... —
Personnel Service Associates .. 70
Pioneer Paper Stock Co. ..... —
Pittsburgh Piping & Equip. .. —
Poirier Control Co. ..... —
Potdevin Machine Co. 8
Powell Valves ..... —
Price & Pierce, Ltd. ..... —

Railway Supply & Mfg. Co. .. —
Raymond, Chas. P. Service Inc. 72
Rayonier, Inc. ..... —
Read Standard Div. of Capitol Products Corp. 57
Ready Power Co. ..... —
Record Fdy. & Mch. Co. 67
Red Ray Mfg. Co. 68
Rice Barton Corp. ..... —
Riedel, Gus & Son ..... —
Riegel Paper Corp. ..... —
Rohm & Haas Co. ..... —
Ronningen-Petter Co. ..... —
Roosevelt Paper Co. ..... —
Roots-Connersville Blower Div. Dresser Industries ..... —
Ross, I. J., Co. 71
Ross-Midwest Fulton Co. ..... —
Ross Paper Machinery Co. .. —
Rotherm Engrg. Co. ..... —
Ruderman Mach. Exchange 72&73
Rust Engineering Co. 66
Ryerson, Jos. T., & Son ..... —

Sandoz Inc. ..... —
Sandy Hill Iron & Brass Works ..... —
Scapa Dyers Inc. 7
Seaboard Air Line R. R. Co. .. 51
Shartle Div., Black-Clawson Co. 43
Shawinigan Resins Corp. .... —
Sheffield Corp. ..... —
Shell Chemical Corp. ..... —
Shuler & Benninghofen 4
Signode Steel Strapping Co. .. —
Simplex Wire & Cable Co. .... —
Sinclair Company ..... —
Sirrine, J. E., Co. ..... —
Smidth, F. L., & Co. ..... —
Soderhamn Mch. Mfg. Co. .... —
Sonoco Products Co. ..... —
Southworth Machine Co. ..... —
Spraying Systems Co. ..... —
Sprout Waldron & Co. ..... —
Stadler Hurter & Co. ..... —
Staley Mfg. Company 63
Stanley Steel Strapping ..... —
Stebbins Engrg., Co. ..... —
Stein, Hall & Co. 44
Stone & Webster Engrg. Corp. —
Stowe-Woodward, Inc. ..... —
St. Regis Paper Co. 36
Sunday, Geo. M. Assoc. 70
Swenson Evaporator Co. ..... —

Taylor Instrument Cos. ..... —
Taylor Stiles & Co. ..... —
Tennessee Coal & Iron Co. ... —
Tennessee Corp. ..... —
Testing Machines ..... —
Texas Co. ..... —
Texas Gulf Sulphur Co. ..... —
Thiele Kaolin Co. ..... —
Thomas Paper Stock Co. 69
Thurso Pulp & Paper Co. .... —
Titanium Pigment Corp. ..... —
Toledo Scale Corp. ..... —
Torrington Co. ..... —
Towmotor Corp. ..... —
Trent Tube Co. ..... —
Turner Halsey Co. ..... —

United Carbon Co, Inc. 68
U. S. Industrial Chem. Co., Div. of National Distillers & Chem. Corp. ..... —
U. S. Rubber Company ..... —
United States Steel Export ... —
United States Steel Supply Co. —
U.S. Steel Corp. ..... —

Valley Iron Works ..... —
Vanderbilt, R. T., Co. 24
Virginia Smelting Co. 20

Waldron, John Corp. ..... —
Walworth Co. ..... —
Weber, H. G., & Co. ..... —
West End Chemical Div. Stauffer Chem. Co. ..... —
Westvaco Chlor-Alkali Div., Food Mchy. & Chem. Corp 9
West Virginia Pulp & Paper Co. 69
Weyerhaeuser Timber Co. .... —
Whiting Corp. ..... —
Wiggins Teape & Alex Pirie — 1
Williams Apparatus Co. ..... —
Williams-Gray Co. ..... —
Wisconsin Wire Works ..... —
Wyandotte Chem. Corp. ..... —
Wyatt Metal & Boiler Works — 1

Yale & Towne Mfg. Co. ..... —
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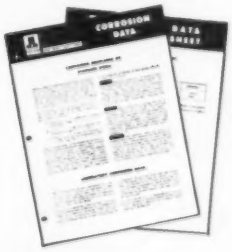

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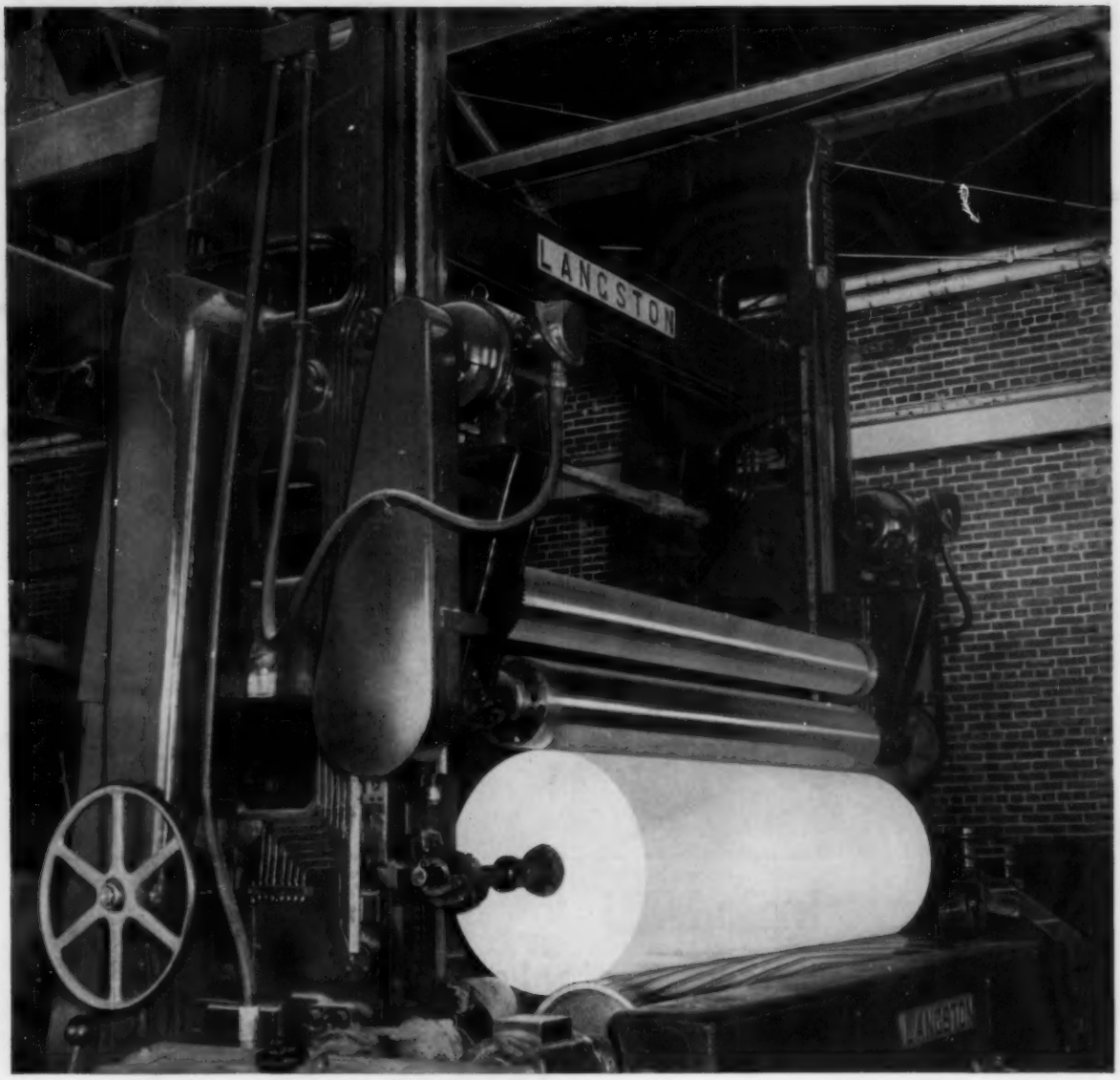

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